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THE BUILDER

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FRIDAY, APRIL 11, 1924.
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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXVI.—No. 4236. APRIL 11, 1924.

INDUSTRIAL EXHIBITIONS

CYNICISM is not fashionable nowadays either as a philosophy or as a form of humour. Samuel Butler was the last of the cynics; he smiled at our modern discoveries as much as at our old pretences.

We have no intention of appearing to be cynical when we say that the recurrent trades' exhibition has developed into a function which the British public has come to expect as a matter of course. The modern world has committed itself to the belief in a continuous improvement, and it looks to the exhibition for the latest ideas. The exhibition is a manifestation (and a very natural one) of an industrial age which demands publicity, and if we care to regard it as a form of advertising, it is infinitely more desirable in this form than on hoardings in the fields. That there is an educational value in an exhibition will be admitted, although it would be idle to pretend that we are consumed by a passion for knowledge to make such a venture a necessity. The problem for the interested individual is to know when the world can advise him better than he can himself. As a generalisation, there is much to be said for the statement that when we are young we do not believe enough in the wisdom of the ages, and when we are old we believe too much in it. At both stages we may fail to discriminate.

It is often suggested that these frequent exhibitions are a heavy liability upon the manufacturer, and consequently affect the prices of his goods. Upon this purely materialistic point of view we have the assurance that an impetus is given to trade, and that orders are received which would not reach the manufacturer without the publicity obtained by an exhibition. We can understand that this would apply to many phases of the building industry, though we bear in mind that the completed structure or building is not exhibited for sale in competition with another building of a different type, as is the case, say, with motor cars. The whole complicated process of building involves many industries which are not an end in themselves; they are involved in the art of building, and the ultimate object is the finished building. It would seem, therefore, that to a certain extent a building trade exhibition is an internal affair, though the main object is to stimulate the public to appreciate and to build.

There are new processes, new materials, new forms of construction, and complete devices which must receive the attention of the architect at some time or other. Brunelleschi, we know, exercised his mind upon the scaffolding and centering of his famous dome in Florence, and his design was influenced accordingly. Many of the newer forms of construction are designed to meet the problems set by architects, and evidence of architectural thought is to be seen in a number of modern appliances and requirements—lift cages, fireproof doors and screens, radiator grilles, electric light and shop fittings are only a few which come to mind. Improvements in machinery have brought their own problems for the architect, and, for a time, facility in manufacture may easily outrun the skill of the designer. The simple design with simple tools is a simple problem, but it is not necessarily opposed to simple design with complicated tools. If we use our machinery properly more people can enjoy the beauty of design.

In recent years a great field has been opened for the development of new ideas in labour-saving appliances in the home. Various post-war factors have contributed to focus attention upon the domestic problem, and it is evident to the casual observer that there has been a tendency to concentrate upon certain details to the exclusion of others equally important. Every architect has experience of the client who is obsessed with some particular patent or material, which he has seen or heard of, but about which he is not capable of judging. Herein lies the danger; the appeal from the manufacturer to the public must pass the tests of the architect, and it is essential that he should be informed on these matters if he means to convince and satisfy his clients. It is only beginning to be realised that little titbits from newspapers upon labour-saving in the home are merely expressions of a fashionable craze, and that the blackening of a couple of bath taps and the door-knocker will not simplify life so very much, if we are not in the mind to part with our old brass candlesticks and bed-warmer. The problem is a big one, and some sense of proportion must be observed; the idea must be carried out in every detail of furnishing throughout the house. Much of the criticism of labour-saving experts deals with trivial constructional details, and seldom with furnishing and dirt-provoking household gods.

Despite the shibboleths of the woman housing reformer, and apart from problems of economics and theories of population, it can safely be said that the standard of fitness in quality and design in house building and equipment is on as high a level of excellence as that of any other industry. There are many factors which prevent us having everything we want, but their discussion is outside the scope of this article. Everybody should be interested in the constant developments which are taking place in building appliances and materials, and should be stimulated to take an interest in the art of home building. There is a great shortage of houses in the country, and the real significance and value of a building trades' exhibition is that the public may be encouraged to take a greater interest in one of our oldest crafts and to accept its share of one of the fundamental responsibilities of mankind.

From this point of view we would like to see an exhibition of architectural design forming a necessary adjunct of every building trades exhibition. We have heard a good deal lately of the ideal triple alliance between the architect, the builder, and the client, and surely the building trades' exhibition provides an excellent opportunity to further this ideal. The importance of the manufacturer of building materials and commodities suggests to us that a quadruple alliance would represent a truer combination of factors. An exhibition has an educational value to everyone engaged in the art of building; it has an educational value to the public which cannot be computed in terms of immediate sales. In expressing the hope that every building trades' exhibition will result in a closer collaboration between all parties interested in building, we believe that we are expressing views which embody the ideal we are all striving for, and that we are stating causes of which architecture is the result. On the lines we have indicated we hope every success will attend this exhibition.

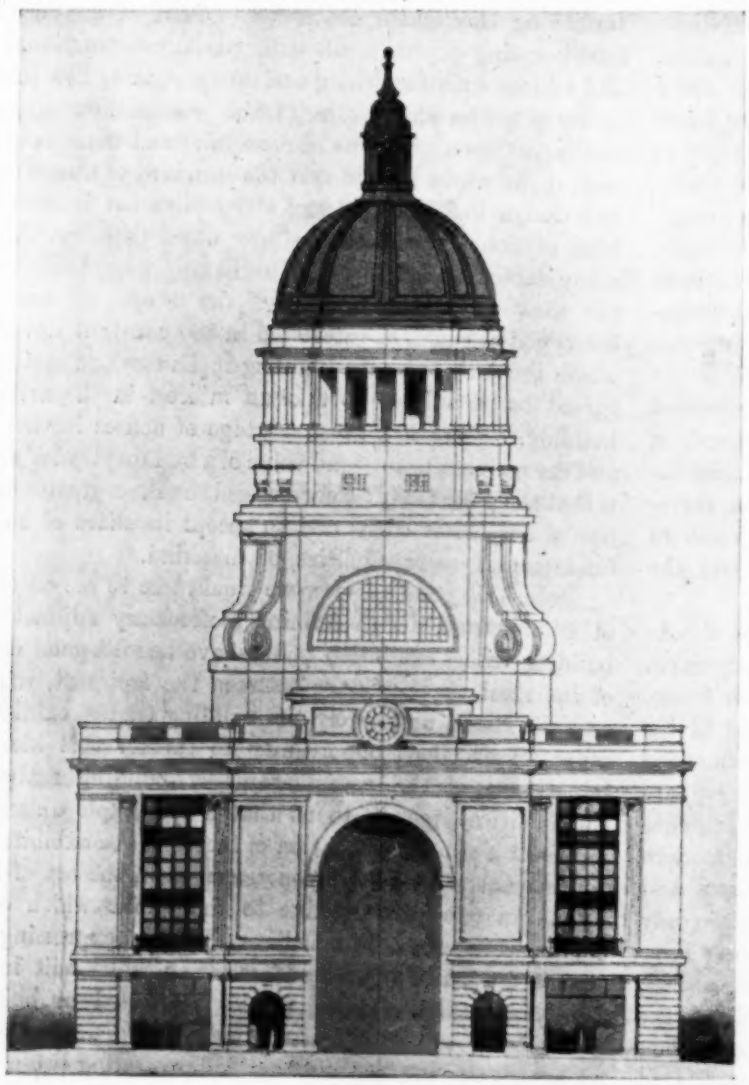
NOTES.

The R.I.B.A. Prizes. How far the strike epidemic has affected the would-be competitors for the Institute prizes we cannot say, but their attractiveness certainly seems on the wane. The ambitions and activities of our students may find worthier objects, or they may be in lazier mood, but the elimination of the competitive spirit would surely be against the popular sentiment, and it is hardly likely to come about yet. The Board have wisely made certain revisions as to the conditions and amounts of the awards, and we shall see during the next two years if the results of effort and expenditure are justified. We hope the quality of design in a practical and artistic sense will be tested by subjects of a simpler kind, and lead to less necessity for large and costly drawings. Students should be encouraged to develop a sense of good proportion and simple distinctive expression. Great sheets of elaborately finished drawings lead to nowhere of great account. It was only the other day we had recounted to us the doings of two architects who collaborated on the competitive designs for a big building some years ago. The first design did not fully please them, though it was very carefully and beautifully set forth. The second one was hurriedly executed, drawn in charcoal, and coloured with the coffee they were using. The second one won the first place in the competition. It furnished no excuse for slovenly drawing, but it showed of how small account drawing was compared with design.

Problems for Students. MR. PURCHON has made a happy experiment at Cardiff in setting his students the problem of designing a new City Hall. We shall look to Cardiff, with its fine record of modern public buildings, to secure a really fine public hall, and some of our best students are quite capable of giving us valuable hints. As will be seen from this issue, a well-known firm of Cardiff architects have just won an important competition at Bristol, and may not this be a note of encouragement to Cardiff students ?

The Gothic Influence. THE very interesting paper by Mr. Goodhart-Rendel on English Gothic Architecture should help our architects to a better realisation of the value of their national heritage. If it accomplishes this it will, we believe, be well for our art. We may surely hope that the broad and enlightened way of envisaging our nineteenth-century architecture which Mr. Goodhart-Rendel has adopted will encourage the growth of a like vision amongst our architects. Instead of finding in our nineteenth-century work an attempted revival of a dead corpse, there may be found many who will, with Mr. Goodhart-Rendel, "refuse to regard Gothic as ever having died in England." Surely we cannot follow him in his record of names which have given honour to modern work in this country without realising that a great tradition and heritage has survived ?

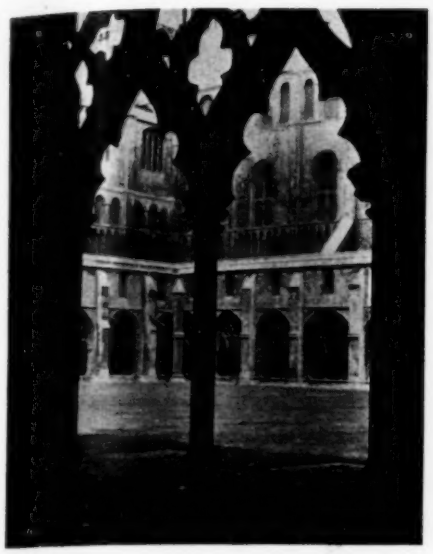
Waterloo Bridge. So we are somewhat suddenly confronted with the rebuilding of Waterloo Bridge, which has been approved by the County Council, the actual design for its rebuilding and widening being not yet settled. The question of another new bridge at the eastern end of Aldwych is in abeyance. Meantime this important work is considered urgent, whilst the all-important matter of cross-river traffic and the replanning of the southern side of the river is in the air. So we go on in London !



Scheme for the Development of the Exchange Site, Nottingham.
MR. T. C. HOWITT, Architect; MR. T. WALLIS GORDON, City Engineer. (*See p.* 579.)

St. Paul's Bridge. THE remarks of members of the House of Commons, called together a few days since by Sir Wm. Bull to consider the question of St. Paul's Bridge, seem to have been practically unanimous in general agreement with the arguments advanced against the bridge. A resolution was carried to the effect that the meeting urgently recommended that before the matter went any farther the Minister of Transport would give an assurance that no money should be spent on the scheme until Parliament had an opportunity to discuss it.

The "Steel Frame Act." MR. EWART S. ANDREWS makes some interesting comments on the "Steel Frame Act" in the course of the article entitled "Ten Years of Construction," which he contributes to this issue (see p. 593). He points out that those who were responsible for this Act were naturally somewhat nervous, with the result that in many respects its provisions are unduly stringent and result in unnecessary increase in cost. He states that it is often cheaper to erect a building designed with the thickness of walls specified under the old Acts for an ordinary brick building, all the internal portion of the building being designed upon a steel frame, than to erect a building designed as a steel frame building under the Act. We agree with him that this ought clearly to be understood by architects and others "because when once the building industry realises this fully we are convinced that sufficient agitation will arise to force



Norwich Cathedral.
From a photograph by Mrs. M. E. B. Cox.

the authorities to take steps to alter the law." The matter is of such importance that we invite discussion on the subject.

Bush House. We need hardly be surprised that Mr. Ralph Knott should question the statement of Mr. J. C. Squire that Bush House is a rebuke to most public buildings. We remember we were promised that in Bush House we should find some echo of the qualities of Somerset House, but a comparison of the two buildings must leave most English architects wondering how such a promise was held out. There is something to learn from Bush House, even if we cannot place it in the same rank as Somerset House.

Architects and Estimates. A tale of peculiar hardship was related the other day in reference to an architect's claim for commission on an abandoned building enterprise, the cost of the work turning out much greater than was anticipated. The architect sent in an account and was offered less than a third of what he had charged. He therefore brought an action for the amount claimed and he was not only non-suited by the judge, but not even allowed the amount his clients had tendered him and was saddled with the heavy costs. It therefore behoves architects to protect themselves beforehand from liability for the surprise of estimates.

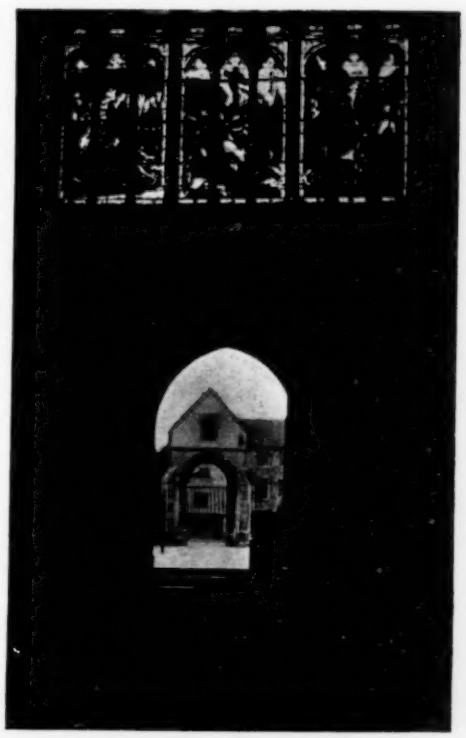
Directorship of Research Building Materials Board, &c. Dr. R. E. Stradling, M.C., M.Sc., Ph.D., Assoc.M.Inst. C.E., A.M.Am.Soc.C.E., Head of the Department of Civil Engineering, Architecture and Building in the Technical College, Bradford, has been appointed Director of Research of the Building Materials and Construction Research Board of the Government Department of Scientific and Industrial Research, London. The Building Research Board, according to the Report of the Research Department, was formed in 1920 to consider and direct the conduct of research on building materials and methods of construction. For this purpose a research station at Acton was established in July, 1921, and since that time this station has been in full operation. Having regard to the immediate importance of the housing question, the efforts of the Board at first were directed to research into building materials and methods of construction suitable for small houses. But the Board has considered that its most useful function lay in fundamental research, and with this end in view the work has fallen naturally into two categories: (*a*) fundamental research of an almost purely scientific nature, and (*b*) the attack of practical problems where economic situations enter or are even paramount. Dr. Stradling was appointed as a member of the staff of the Technical College, Bradford, in August, 1922. Since he has entered upon his office in that College he has been responsible for the direction of the whole of the work of the Department of Civil Engineering, Architecture and Building. He has remodelled almost entirely the full-time and part-time courses in the College.

Our Polluted Atmosphere. Smoke, fog, foul air and vibration are leaving their mark on Southwark Cathedral. The appeal of the Cathedral authorities for help should meet with a ready response, but the need for preventative measures against the source of this damage is an even more urgent affair.

Triumph in the Back Yard. The new insurance building by the entrance to the Admiralty Arch in Trafalgar-square, now nearing completion, merely underlines the perpetuation of yet another ragged edge to the various efforts we make in the direction of civic planning—efforts which so often give way to exhaustion. Our great ceremonial highway, aiming proudly and axially at our conception of a triumphal arch, is now condemned for at least another generation to debouch on to a back-yard. No wonder the spirited State horses shy and side-step at the sight, and seek an outlet by way of the Horse Guards'-parade! And how the foreigner must laugh! For ourselves, we would weep with humility and shame and hope on for the long-desired plan that will make these things impossible in the future.

Salmon Fly Posters. If hypocrisy is the homage vice pays to virtue, the improved poster is the compliment trade pays the artist. Chairmen of great companies have been telling their shareholders that far from being high-brow or æsthetic, they encourage the poster artist because it is worth while. Good work makes good. Every advance in taste is a milestone gained; we must consolidate the ground by avoiding either a stereotyped manner or a reaction to the shock tactics from which we have just escaped. Fishermen tell us there are two principles of appeal in the fly-makers' resources, that of natural attraction in the trout fly, and that of the daringly provocative in the salmon allure. At present it is the hour of the Jock Scot, and very good it is. Our advice to the trader is to give the artist his head, and if he is an artist to leave him alone. It may appear captious to criticise, but in this art to have attracted notice is the measure of success.

Village Life. A Leaflet issued by the Rural Industries Intelligence Bureau sets out in general terms the nature of the problem of village life, and there is a good deal which we can cordially endorse in the views expressed. "No one," as it is said, "who compares village life as it was and as it is, can fail to be struck by the former diversity of its interests as contrasted with the present monotony." It is when we come to the consideration of the remedy for all this that the difficulties appear. The village has decayed with the decay of human relationships, and needs more than economic laws and organisation to restore it. There are some hard sayings in this leaflet for those who regard the problem not as, first of all, one of either economic or administrative character, but as in the main connected with deeper and more vital considerations.



From the Interior of Norwich Cathedral.
From a photograph by Mrs. M. E. B. Cox.

M

GENERAL NEWS

Professional Announcements.

The practice of Messrs. Charles Jackson & Son, chartered quantity surveyors, is now transferred to 75, Princess-street, Manchester.

Mr. Philip Robson, of Westminster and Manchester, has been appointed Consulting Architect to the Wigan Schools' Association.

The address of Messrs. Collcutt & Hamp is now 126, Wigmore-street, Portman-square, W.1. Telephones: Mayfair 4764–5.

Housing at Wembley.

Among their exhibits at the British Empire Exhibition the Ministry of Health will include photographs and plans illustrating the lay-out of approved housing estates and the design of the houses. The examples have been selected from different parts of the country so as to show the difference in design according to local conditions and the materials available. Two large town planning models will be found side by side, one representing a common type of industrial town, devoid of intelligent arrangement, inconvenient, and smoke-blackened, and the other showing what can be accomplished by foresight and skilled design upon the same site. There will also be a set of the maps required for a town-planning

scheme and a perspective plan showing what Margate is expected to look like at some future date. A map is also to be shown indicating the regions in England and Wales where town-planning schemes are being carried out. The exhibit on smoke prevention will show the approximate amount of impurity in town air, and the instruments used for recording and measuring air pollution; charts will illustrate the damage and waste of fuel caused by inefficient combustion.

Carlton Club Reconstruction.

A luncheon was recently given at the Carlton Club, at which Viscount Younger of Leckie presided, to the workmen of Messrs. Trollope & Colls, Ltd., who were engaged on the work of reconstruction. There were bricklayers, masons, carpenters and painters, together with their labourers, who sat with various members of the club.

Mr. Goodman, the general foreman, was received by Viscount Younger, the Chairman of the Club.

Viscount Younger said the Committee thought the best plan to show their appreciation of the way in which the work of refacing the Club had been carried out was to entertain the men to lunch. Viscount Younger coupled with the toast the names of the two foremen, and Mr. Goodman, in response, said that they would all look back upon that day with very great pride.

Building Trade Wages.

A conference will be held in London to-day between the building operatives' trade unions and employers in regard to the operatives' demand for a wages advance of 2d. an hour. The employers' offer of ½d. an hour, with other concessions, has been rejected.

Government Housing Scheme.

A conference on housing in Greater London arranged by the Guildhouse Fellowship was held recently at the Guildhouse, Eccleston-square, on Saturday.

Dr. Raymond Unwin, chief architect to the Ministry of Health on Housing and Town Planning, said a good deal had been achieved in the direction of beauty in building by recent housing schemes. It had been established that a good house could be built with plenty of garden without costing more than many of the nightmares of ugliness and bad types erected by short-sighted people.

Mr. Coppock, general secretary of the National Federation of Building Trades Operatives, speaking of the Government's proposals, said that we were on the eve of a tremendous proposal with regard to housing in this country. The present Government had tackled the problem of housing in a manner entirely different from that of any previous administration.

On the matter of dilution, Mr. Coppock said it was impossible to train a man to any of the crafts after he had got beyond a certain age. Any augmentation must come from boys from eighteen to twenty years of age. Dilution over that age was uneconomical. But in return for training these they demanded a guarantee of employment for some years, and he thought he could say that the guarantee would be fulfilled for a period of at least fifteen years, provided the Opposition in Parliament agreed.

The programme they had set out, he continued, was 2,500,000 houses in a period of fifteen years, which was 500,000 less than they anticipated being able to do. The people tackling it were going the right way about it. Industry was prepared to use every effort to do this work.

Mr. Coppock, speaking on the type of houses that should be built, said that despite all that had been remarked about the Addison house being small and not having a good aspect, it was the best house that had been built for the working classes in this country. But the ones they were going to build would be better, there would be more concern shown for the equipment of the house than for beauty of aspect. Let them spend the money on helping to save drudgery in the house rather than on beautifying the aspect.

COMPETITION NEWS

Bristol Police and Fire Premises.

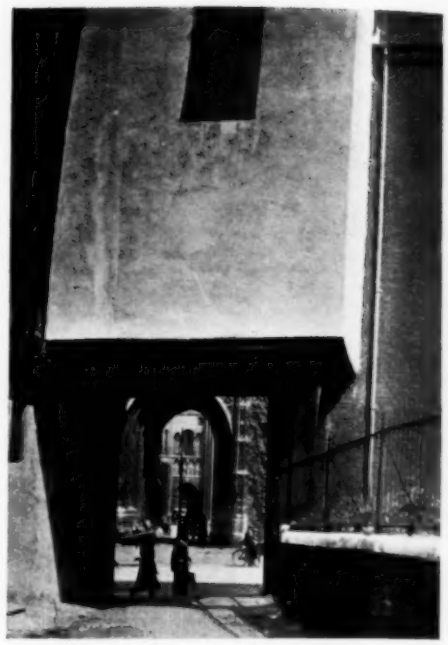
The assessors, Messrs. W. Curtis Green, F.R.I.B.A., and George H. Oatley, F.R.I.B.A., have made the following awards in this competition:—

(1) Messrs. Jones & Thomas, Cardiff.
(2) Messrs. Ashley & Newman, London.
(3) Mr. E. Vincent Harris, London.
(4) Mr. Harold E. Todd, Bristol, and Messrs. Smith & Hendy, London.

The assessors' report is given on p. 575, and the designs placed first and second are illustrated in this issue.

Fryston Hall.

The South Yorkshire Poor Law Committee recently assessed designs in connection with the scheme for the conversion of Fryston Hall into a mental institution as follows:—(1) £100, Mr. J. Ainley, Huddersfield; (2) £50, Messrs. Percy Brown & Glover, Newcastle-on-Tyne; (3) £25, Messrs. Walter Hanstock & Sons, Batley.



New Premises, Hull.

The assessor, Mr. L. Kitchen, F.R.I.B.A., has placed the design of Messrs. F. G. Horth & H. Andrew, AA.R.I.B.A., first in a limited competition for new premises to be erected on the Spring Bank, Hull.

Public Hall, Glasgow.

Designs are invited for a public hall to cost approximately £25,000. Premiums of £150, £100, £75, and £50 are offered respectively. A plan of the site, together with terms and conditions can be obtained from the Office of Public Works, City Chambers, 64, Cochrane-street. Sending-in day, July 4.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Industrial Designs (June; Dec. 21, 1923). National Theatre (April 26). Ross-Smith Memorial (Sept. 30; Feb. 1). Bradford Masonic Temple (June 30; March 28). Salford Baths (April 22; April 4).

A FINE OLD CITY

AN APPRECIATION OF NORWICH

By GEORGE KENWORTHY, Assoc.M.Inst.C.E.

THERE is always something elusive and attractive about a place which boasts a nursery rhyme. The real old English nursery rhyme dates back to the times before our written language as we now know it, when mothers crooned these little songs to their children in just the same words as they themselves had heard them. A city with a nursery rhyme bears the hall mark of Father Time. Everyone has heard of the Man in the Moon, and his search for Norwich.

Even as a child this appealed to me; I wanted to follow this Dream-Man in his search. Now that I am a citizen of this Old World city I find that Norwich does not disappoint—it lives up to its reputation. Truly, as Borrow says, "It is a fine old city—perhaps the most curious specimen at present extant of the genuine old English town . . . Who can wonder that the children of that fine old city are proud of it?"

. . . . . .

Is it not contrast which makes life really interesting? And Norwich is essentially a city of contrasts. On the one hand, a large agricultural centre, on the other a thriving industrial town; the "Charing Cross" of the Broads, and the most inaccessible town in England; a city boasting one of the most inspiring sacred edifices in the kingdom, a city where flintwork and architecture of the most rare abounds; yet a place of narrow winding streets and crazy tumble-down houses; a city in one of the flattest of counties, yet built on and surrounded by considerable heights; a city built in a district of water and marsh-lands, where is recorded almost the lowest annual rainfall of any place in England!

Norwich forms as great a contrast between the grey-black industrial centres of the North as that which exists between the fresh optimism of the child and the grave outlook of an adult. Therein lies its charm, for, after all, those who live out their lives in the great, bleak work-cities, who are only interested in—can only talk of—iron and coal, manufacture and labour, miss a good deal of the charm and beauty of life.

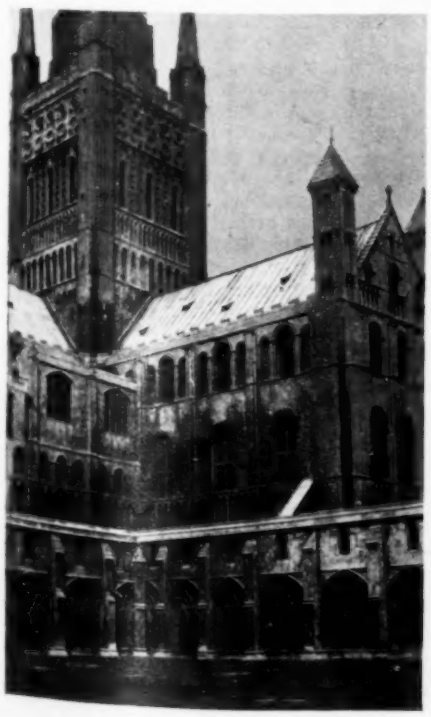
One can be efficient, work hard and well at engineering or manufacturing, wonderful and engrossing as these occupations are, and yet know that they are overshadowed by a still greater and more ancient industry—that of agriculture. But Norwich is a manufacturing centre too, and is famed, not only for mustard, but for many branches of engineering, and perhaps most for the manufacture of "my lady's" dainty shoe. Thus Norwich, having wedded the two, may be congratulated on the success and happiness of the combination.

Have you, perchance, seen the "black" country of Staffordshire where, for miles around, neither trees nor grass will grow? Then appreciate the unspoiled natural beauty which lies within and around Norwich.

Have you lived in the big, grey cities where all is rush and noise, where streets are wide and straight, with houses well-built, and yet, withal, of a sameness and an ugliness past description? Then appreciate this picturesque old English city.

Studies of Norwich Cathedral.

[The views of Norwich Cathedral on this and the preceding page are from photographs by Mrs. M. E. B. Cox.]



Consider the wondrous Cathedral, of a grace and delicacy unique in this country. Where is the fraternity of early masons who so tirelessly built, with such unerring skill, a structure whose beauty appeals with poetic power to all that is best in us, stamped and imprinted, as it is, by those builders, with the evidence of their devotion to the Great Architect? In spite of its hoary age, its baptisms of fire, this fine Cathedral might have been built but yesterday!

. . . . . .

Here we have tottering, crazy Tombland Alley, leading to the Maid's Head. As you pass along the narrow causeway, can you not see standing there outside the famous hostelry the coach of the haughty Queen Bess? Yes—and here comes her retinue, and there, the proud Queen herself!

. . . . . .

There is a simple pleasure in watching the boatmen ply their long "quants" as they urge the characteristically quaint wherries along the mirrored surface of the Wensum, past the old Boom Towers, where, giving rein to your fancy, you may conjure up visions of a long-dead past.

. . . . . .

Did not the Viking Swevn, with his fierce Danes, sail up this very river and carry war, ravage, and fire to the city? Was not Harold, the last English king, governor of this city? and that national hero, Hereward, the last of the English—did not he and his noble band of heroes from these parts defy the proud Normans on the waterways hereabouts?

Trace the old city walls to the Boom Towers and in fancy see the fight—in fancy hear the dull, reverberating thud of the battering-ram, the twang of the cross-bow, the hum of flying arrows, and the fierce cries of the combatants amid the clash and crash of axe and sword.

What tales these crumbling walls would tell if stones could speak!

And the Castle and the Keep, dominating that mighty mound where, so tradition says, King Gurgunt, sceptred and enthroned, his treasure about him, lies buried deep!

Do not these stories conjure up visions of the grandeur of the days of old? Of chivalry and gallantry, of songs and revels—aye, and of debauchery, too—recalling the names of Roger Bigod, the Norman builder of the Keep, and his son William, Constable of the Castle, who, with the Conqueror's grandson, Prince William, together sailed and sank in the ill-fated "White Ship."

. . . . . .

Nor must Kett be forgotten. Many a rebel has had a more ignoble cause! Was he not a hero? Was not the battle on Mousehold (where eventually he was routed by Warwick) after which Kett was ignominiously hanged on the city walls—an association of which Norwich need feel no shame, since it was a resistance against unjust land enclosures by the grasping Barons?

. . . . . .

Turning now to more recent times and people, it is not strange that so beautiful a city should have produced one of the few really great landscape painters, John Crome—"Old Crome." Nor is it anything but fitting that Norwich should possess the greatest honour of all—the quiet grave of the Martyred Nurse, who gave her life for her country, and who now sleeps serenely in "Life's Green," beneath the shadow of the city's great Cathedral.

. . . . . .

Yes! Indeed, Norwich may well be proud of its past and of its present. May it be granted full confidence in its future, too!

Yet, I wonder, do its citizens appreciate fully, as they should, the unique beauty of their lovely city?

CORRESPONDENCE

Attracting Public Interest.

SIR,—As a constant reader of *The Builder* I should like to express my appreciation of your article, "Attracting Public Interest," in your last issue. I am not an architect, but plan drawing (ground plans) has been part of the duties of the position I hold and, for many years past, perusal of your paper, with reproductions of architects' details, has always been of great interest, profit and pleasure. (I may also say that many of the advertisements have been instructive and of much interest.) Exhibiting architectural drawings is, in my opinion, of educational value to everybody. This educational process is very necessary from the points you adumbrate, as I have often found the ignorance of even intelligent persons quite detrimental to themselves. So much additional interest is being taken at the present time in housing schemes that it is incumbent on parties having the settlements to be well versed in at least a superficial knowledge of their commitments. The general public, too, when knowing the innumerable details, apart from the necessary expert skill obtained by years of study and experience in most cases, would more willingly pay the fees charged by architects. The architectural art is delightful and elevating, and the more publicity given to all its beauties the more I consider will society benefit in the mass.

JAS. BOLTON.

Scarborough Wages.

SIR,—A question has arisen respecting the grading of Scarborough under the National (Town) Grading Scheme which superseded the Area Grading Scheme previously in operation.

Under the old Area Grading Scheme, Scarborough was placed in Grade "B," and under the Town Grading Scheme automatically was regraded A 3. The present rate for tradesmen in A 3 towns is 1s. 6d., but in the *Builder* the rate for tradesmen in Scarborough is shown as 1s. 7d., which is the agreed rate for A 1 towns. Will you please let me know if any change has recently been made in the grading of Scarborough and/or other towns in Yorkshire?

L. B. BAGOT, Major.

Yorks.

[Scarborough was regraded from A 3 to A 2 with effect from October 1, 1923, and from A 2 to A 1 on and from February 1, 1924.—ED.]

The Headless Saints in Ely Cathedral.

SIR,—It seems a great pity that no attempt has been made to restore the heads to the beautiful figures in Clunch stone in the superb Lady Chapel. The beheading was the handiwork of Oliver Cromwell, so that it can hardly be reverence for him that prevents the restoration. Perhaps the Dean may take the matter up when he sees the figures that have recently been restored at St. Paul's Cathedral.

EDWARD VALE.

Weston-super-Mare.

ARCHITECTURAL SOCIETIES

READING SOCIETY OF ARCHITECTS.

The fourth annual meeting of the Reading Society of Architects, which is the Berkshire Branch of the Berks, Bucks and Oxon Architectural Association, was held recently at Reading.

The chair was taken by Mr. W. Galt Millar. The hon. secretary (Mr. C. B. Willcocks) read the annual report dealing with the work of the executive during the past year, in which it was stated that the total strength of the Society now is 102 members, made up as follows:—49 Fellows, 11 associates, 23 students, 8 associated craftsmen, and 11 honorary members.

The following members were elected to form the executive committee for 1924:—Chairman, Mr. H. Whiteman Rising, F.R.I.B.A.; vice-chairman, Mr. W. Galt Millar, F.S.I.; hon. treasurer, Mr. W. R. Morris, Lic.R.I.B.A.; hon. librarian, Mr. H. Whiteman Rising, F.R.I.B.A.; hon. secretaries, Messrs. C. B. Willcocks, F.R.I.B.A., and W. J. Freeman, A.R.I.B.A.; hon. auditors, Messrs. A. S. Cox, M.S.A., and E. P. Morgan, Lic.R.I.B.A.; members, Messrs. W. R. Howell, F.R.I.B.A., J. T. Saunders, F.R.I.B.A., H. Hutt, F.R.I.B.A., and F. G. Sainsbury, M.S.A.

The following were elected to serve as representatives of the Society on the Council of the Berks, Bucks and Oxon Architectural Association:—Messrs. W. R. Howell, F.R.I.B.A., F. H. Floyd, F.R.I.B.A., J. G. T. West, M.S.A., C. B. Willcocks, F.R.I.B.A., F. A. Woods, A.R.I.B.A., J. R. Greenaway, F.S.I., and E. P. Morgan, Lic. R.I.B.A. Mr. H. W. Rising was nominated for election as vice-president of the Berks, Bucks and Oxon Architectural Association.

LEICESTER SOCIETY OF ARCHITECTS.

The Leicester and Leicestershire Society of Architects recently held their annual prize-giving. Most of the drawings, especially in the case of the "Travelling Studentship Prize," were in the way of sketches. The first prize was won by Mr. A. L. Sharpe, for a measured drawing of the Corn Exchange. Messrs. McL. Keay, E. A. Warren, and S. Smith were each awarded special prizes. The Nesbit Prize, which was for a plan of a city terminal for a motor omnibus company, was also won by Mr. A. L. Sharpe, Messrs. J. L. Townsend and S. Smith each obtaining a part share in the second. The measured drawing prize was won by Mr. Frank Brown.

THE LIVERPOOL ARCHITECTURAL SOCIETY

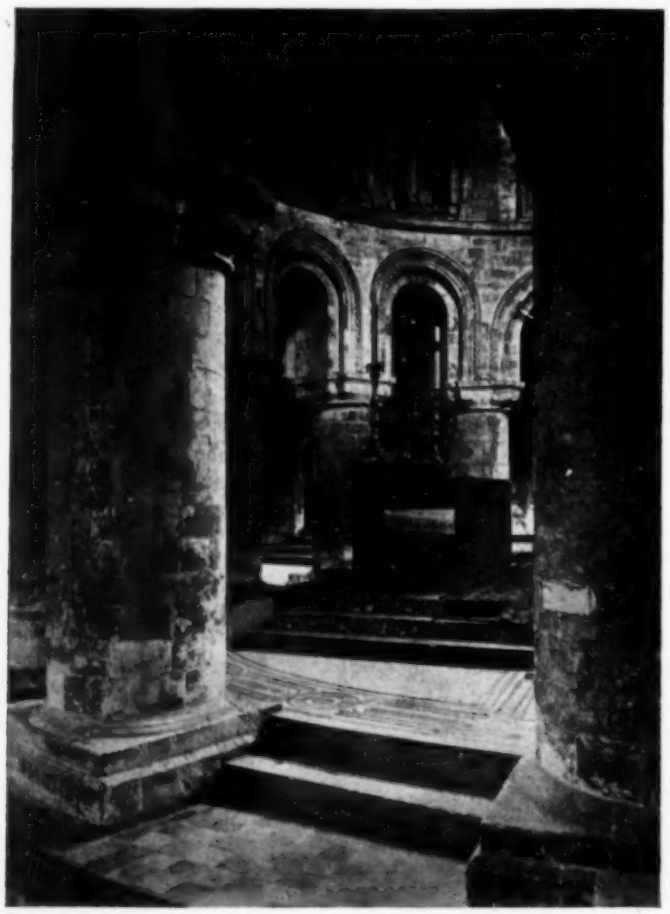
THE annual report of the Council for the official year 1923–1924 was submitted to the annual general meeting recently. The present membership of the Society consists of 56 Fellows and 68 Associates, a total of 124. There are also 3 Hon. Fellows, 13 Hon. Associates, and 23 students. Members elected since the issue of the last report: Fellow, Rowland Stubbs, Associates, Donald Brooke, B.Arch. A.R.I.B.A., Edgar Fryer, A.R.I.B.A., H. H. Hughes, A.R.I.B.A., R.C.A., R. D. Jones, A.R.I.B.A., H. C. Killender, A.R.I.B.A., P.A.S.I., P. H Lawson, A.R.I.B.A., A. J. Norcliffe, A.R.I.B.A., R. A. Threadgold, A.R.I.B.A.

The Honan Scholarship for 1924 was awarded to Herbert Thearle. An additional prize of £10 was awarded to Theo. Wills who was placed second in the competition.

Garston Housing Contract.—The second and final report of the Inspector of the Ministry of Health (Mr. Orchard) on the inquiry into the Garston Housing Contract was published on February 2. . . . The Council are opposed to architectural work of the Corporation being carried out by architectural staffs under the control of civil engineers, and are satisfied that the results to be obtained from such an arrangement can never be satisfactory.

Liverpool Master Builders' Association.—The Council received a deputation of the Master Builders' Association who desired to say that arrangements had been made whereby they would rejoin the North-Western Federation (of Master Builders) from May 1. The Deputation explained the difficulties of the position with respect to apprentices in the building trades, and the efforts that were being made to obtain an increase in members.

In view of the much larger amount of capital now required for carrying on the building trade, the deputation asked the assistance of the Council with respect to the issue of interim certificates, which it was desired should be issued more promptly as the money became due. Where it was intended that a penalty clause should form part of the building contract, it was asked that it should be so stated as an item in the bills of quantities.



Photo, R. Huth.

[St. Bartholomew-the-Great, Smithfield: View from Apse and Altar, North Ambulatory.

BRISTOL POLICE AND FIRE STATIONS COMPETITION

In the course of their report the assessors state:—"We have carefully examined the twenty-eight designs submitted in this competition. With notable exceptions the standard attained is disappointing. It is notable that very few competitors have been punctilious in adhering to the letter of your conditions, and some of those who have come nearest to doing so are furthest from architectural excellence. There are, however, individual designs of very great merit, the authors of which have kept, if not the letter, the spirit of the conditions in such material points as the positions and areas of specified units in the design.

"We recommend that design numbered 9, awarded the first premium, be carried out. This is a design of exceptional merit. Not only is it a scholarly and refined work, it has also a genuine and legitimate originality based upon a sound knowledge of architecture. The elevations express in a remarkable degree the purpose of the building, and the author should be encouraged and helped to carry out his design with only such minor alterations as may suggest themselves in the process of working the design out in detail. A good feature of this design is the absence of internal areas. This, and the mezzanine floor, the latter necessary to give the accommodation asked for, allows of the yard being larger than you anticipated. We are of opinion that with reasonable care this design, which in many respects is the simplest and most economical of those submitted, can be carried out within the limits of costs imposed by the conditions.

"Design numbered 5 we place second in order of merit; the plan very closely adheres to the restrictions and conditions, the elevations are dignified and restrained, the whole is a conscientious and highly competent solution of the problem, very economically arranged.

"We have awarded the third premium to design numbered 21. This in some respects is the most ambitious architectural composition of any, with many good qualities both in plan and elevation.

"After these designs there is a considerable drop in quality; we award the fourth premium in equal parts to designs Nos. 4 and 10. They are conscientious but undistinguished attempts to solve a difficult architectural problem."

The assessors were Mr. Curtis Green, A.R.A., and Mr. George H. Oatley.

The full result of the competition is given on page 572.

We illustrate in this issue the design placed first, by Messrs. Ivor Jones and Percy Thomas, FF.R.I.B.A., and the design placed second, by Messrs. H. V. Ashley and Winton Newman, FF.R.I.B.A.

In the course of the report submitted with their design Messrs. Ivor Jones and Percy Thomas state:—

"An endeavour has been made to solve the problem in a bold, simple and straightforward manner by a single building following the outline of the site, and omitting entirely all internal courts or areas." They draw attention to the following features of the design:—

Fire Station.

The provision of a large open practice yard, affording ample space for fire drill and giving abundant light and air to the surrounding buildings; and the introduction of a mezzanine floor enabling the space over the workshops and offices to be economically used.

The engine house is arranged so as to allow each of the thirteen machines to have a clear run to the street and to return to its position from the yard without moving other machines.

The superintendent's, inspectors' and sergeants' offices are placed centrally, and command the whole of the engine house, while the watch room is on a mezzanine over these offices.

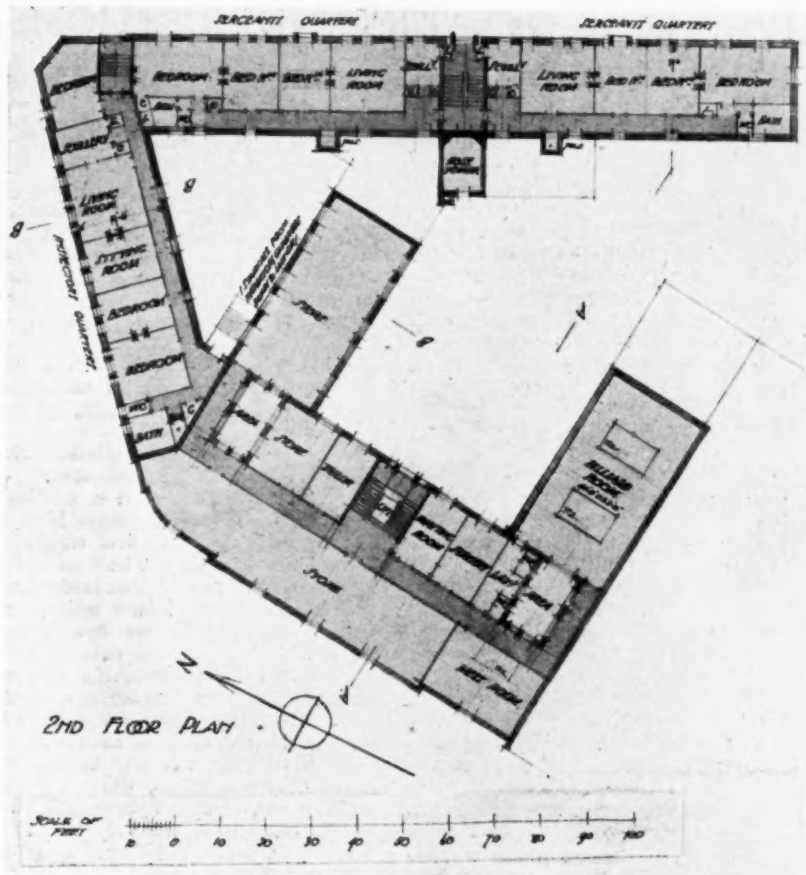
The billiard room, reading room, mess room and baths are on a mezzanine floor over the workshops, easily approached from the engine room; the billiard room actually overlooking the engine room.

The hose tower is combined with a practice tower, and placed against the north wall of the police courts, thereby allowing ample facilities for hose and ladder practice. A covered washing space is provided adjoining the tower. Returning machines would proceed direct to this for washing, hoses would be removed for drying, and tanks filled from adjoining petrol filler, and machines would then proceed direct to their stations.

The whole of the married quarters have been provided on two floors. Separate coal houses are provided in the basement. Each of the quarters has a separate entrance from a wide open verandah overlooking the practice yard, and a laundry is provided on the first and second floors with access to the flat roof for drying purposes. Four sliding poles are provided, two opposite the entrance to the sergeants' quarters, on first and second floors, one from inspectors' on second floor, and one from the superintendent's house. All poles land direct into the engine house, and one is available for the occupants of the billiard room.

Advantage has been taken of the necessary large headroom of the engine house to introduce a mezzanine floor in the administrative block adjoining, thus eliminating any projecting wings in the practice yard. Staircase, lift and lavatories are conveniently placed to serve all floors. The first floor extends over the Rupert-street portion of the engine house and provides a large well lighted administrative office, board room, &c., with centrally placed staircase, lift and lavatory block.

The second floor contains billiard room, surgery, classroom, &c., and two store rooms, the third store room being on the mezzanine floor.



SECOND FLOOR PLAN.

Bristol Police and Fire Stations Competition.

DESIGN PLACED SECOND: BY MESSRS. H. V. ASHLEY AND WINTON NEWMAN, FF.R.I.B.A.

Stables.

The stables and hackney carriage department are placed at the corner of Nelson and Silver streets.

"A" Division.

This department has been arranged on similar lines to the plans prepared by the City Valuer, but with the small areas at the back eliminated, and the walls of the parade room carried down, enabling the whole of the cells to be placed facing the internal area at the rear. A wide, easy staircase leads from the charge room to the cells, and the cell corridor communicates direct with the corridor under the police courts. Staircases at either end of the building lead to a large parade room on the first floor, and a mess room over the skittle alley.

It is proposed to construct the building generally of brick faced externally with bath-stone from an approved quarry, the whole of the floors, staircases, &c., being of reinforced concrete. The foundations would be carried on a reinforced raft or piles, depending on the nature of the sub-soil, to ascertain which trial holes will be sunk. A sum of money is set apart to cover any special foundations which may be required.

Each of the three departments, Fire Brigade, "A" and "E" Divisions, would have a separate low pressure hot water heating apparatus, with radiators fixed against the outside walls, and provided with fresh air inlets where possible. The administrative and police offices would also have the vitiated air extracted at ceiling level, and conveyed by ducts to electrically driven centrifugal fans placed on the flat roof. All married quarters would have fireplaces in the principal living rooms.

The total estimated cost of the Fire Station is £45,749, and for "A" and "E" Divisions £64,761, making a grand total of £110,510.

THE WORK OF ALEXANDER THOMSON

By MALCOLM STARK.

THERE are many architects. The inspired are few; many begin and continue to do well, until commercial considerations prevail, and ideals are too often sacrificed in favour of a lucrative practice. Some, whose works bear the mark of the master-mind, are taken from us at a comparatively early age by the unsparing hand of time. Wm. Burges, J. D. Sedding, Eden Nesfield, G. Gilbert Scott, Junr., and E. W. Godwin (who all left behind a legacy of executed work of a very high order) passed away before reaching the age of sixty. Alexander Thomson—known to the profession as "Greek Thomson"—died at the age of fifty-eight. His contemporary, George Edmond Street, passed away about the same age.

Both of these eminent architects practised with distinction in very different types of architectural art. And while both Thomson and Street respected the traditions of the particular type of art that appealed to them—Thomson of Classic, and Street of Gothic—they exhibited in their executed work a very remarkable power of individuality and variety in design. Street was not attracted to formal Gothic, English and Continental examples were to him but sources of inspiration and suggestion. And Thomson, in common with Street, regarded precedent as a servant and never as a master. It sometimes happens that the early creations of those distinguished in the higher walks of art are more inspired, and consequently more inspiring than their later works. This may be said of a church by Street in Westminster, and a small school at Chatham—they possess a charm that is stimulating and is not to be found in his later ecclesiastical buildings. Thomson's work, on the other hand, improved with experience. To those acquainted with it, they are impressed with the feeling that in some of his early work he is cautiously feeling his way. He designed for a very short period in domestic Gothic; later his work was suggestive of Italian; but when he elected to become the exponent of modern Greek, no consideration would tempt him to forsake his adherence to it—and his sagacity in this direction will find favour with sensible people; perhaps for this reason he was very fortunate in having a most appreciative clientele. He had ample opportunities of meeting and reciprocating the thought of the cultured in science, art and literature. And the personal conduct of his practice, his sacrifice of money through an honourable faithfulness to artistic ideals, and his literary ability doubtless brought him quickly into contact with sympathetic clients, and he soon built up a varied and extensive practice. To the public his conceptions were too vast and too abstract for appreciation; to the connoisseur they were a perennial source of enjoyment. Thomson died just as he finished his most original and most distinguished work—Queen's Park Presbyterian Church, Glasgow. His earliest ecclesiastical erection is St. Vincent-street Presbyterian Church—a structure which, commanding as it does a fine vista to the south, gains much in dignity by being placed on the slope of an eminence, and on a site open on three sides. It is designed with a fine open portico of the Ionic order to the north and south. Its principal feature is a large tower, slightly Egyptian in feeling, rising on the east side as a perfectly harmonious integral part. It is a noble composition, the proportions, profiles and the disposition of the subsidiary parts leaving nothing to be desired.

Very different in character is Caledonia-road Presbyterian Church. The site is a level one, and also open on three sides. The principal front is designed with an open portico of the Ionic order, resting on the ground story; a fine tower, suggestive of an Italian campanile, is placed on the west side of the portico. This work combines in a high degree severity and refinement, and is more academic in its ordered lines than any of the other four ecclesiastical buildings designed by Thomson.

The works of Thomson cover a large field of operation. His tenements, three to four stories in height, and all built of polished ashlar courses of sandstone, line many of the principal streets of south Glasgow—Eglinton-street, Moray-place, Nithsdale-road, Pollok-street, &c. All are typical of his architectural expression of Greek in every line of detail, although it is impossible to find a single repetition of design.

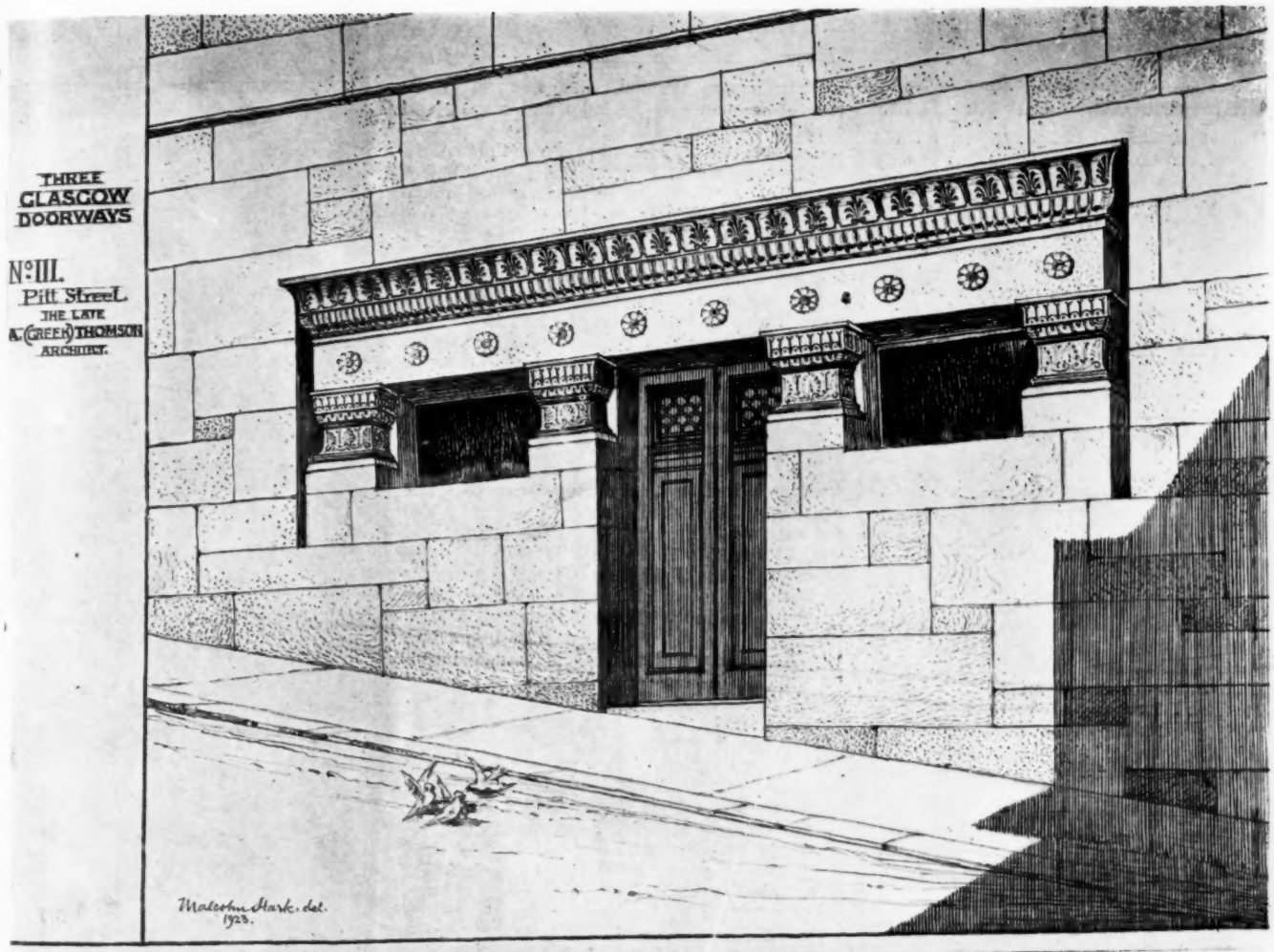
Thomson also erected a large number of warehouses. The largest and finest of these may be said to be the fine block on the east side of Union-street. As a design unbroken by any single feature in its great length, it is remarkable. The fenestration of each story is very fine; the flat surface of the walls is enriched with much incised Greek honeysuckle ornament. This lofty structure, with a cornice of great depth and projection, towers high above its neighbours to the north and south. Placed at regular intervals on the kerb of the pavement in front of it were lamp standards of remarkable design, very original and aggressive, and of great girth. Some time ago, practical considerations urged on the part of the City Corporation led to their removal; only one is now known to exist, where it serves as a lamp standard at the converging point of three thoroughfares at New Cross-gate, London.

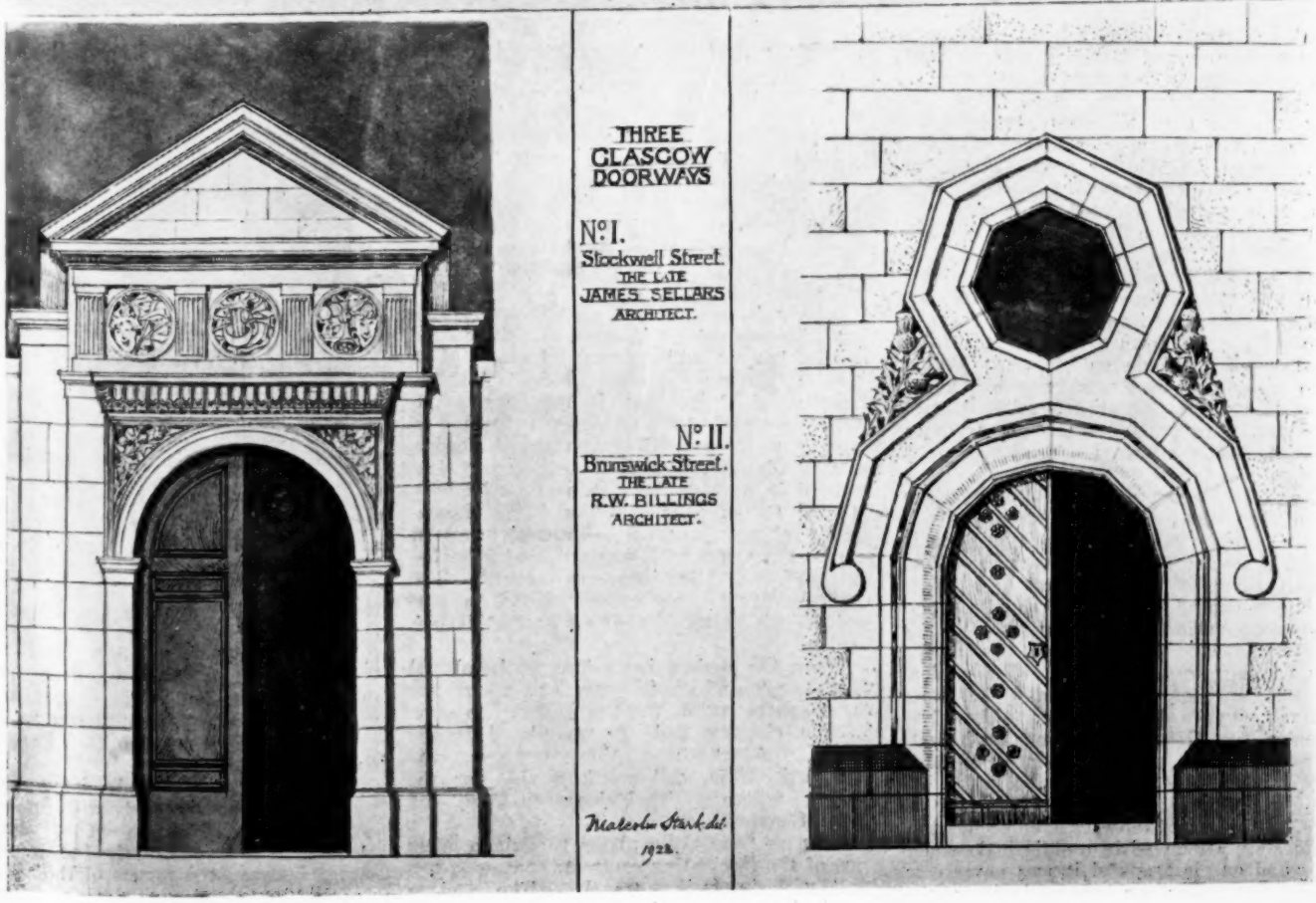
Another great building is the well-known Great Western-terrace, Glasgow. The site is an ideal one, and the opportunity has not been lost of using it to the very best advantage—dignity, scholarly feeling, and refinement dominate this, the finest conception that has come from Thomson's pencil. A well-known critic has said of this work: "In so far as it is possible for any architectural work to be perfect, this superb terrace must surely be considered so. Purpose of thought is in every line of its structure. It is worked out with a single-minded consistency and power that make it a masterpiece for all time. It marks the highest level of Thomson's attainment." Another fine block of terrace houses is Westbourne-terrace, situated a short distance from Great Western-terrace. Here we have a happy blending of the palatial and the domestic—a suave severity is the octave struck. Again, the Ionic order, as at Great Western-terrace, is in evidence; fluted columns are placed at each side of the doorways, guarding pleasant porches, which at once suggest dignity combined with hospitality. These are approached by a short flight of steps which add to the completeness of a beautiful architectural composition, the detail and scale being perfect.

Consistent with a very varied practice, Thomson designed several houses and cottages, principally in Langside and Pollokshields (suburban districts of Glasgow); some of these were published in a volume entitled "Cottage, and Villa Architecture." The subjects were representative of the architecture of the Victorian Age, at a time when perhaps domestic work had its vogue—when the work of Norman Shaw and Philip Webb was at its best. It is a truism to say that the quiet, homely expression of their honest endeavours found a counterpart in Thomson's domestic work. His large houses were never pretentious, and his small ones were never mean. Holmwood, Cathcart, his largest, was built for Mr. Cooper, and is a good example of the application of Greek principles in designing a residence. The provision of light and air, comfort and convenience, have not hindered a fine æsthetic performance in modern Greek. With the Greeks it was but a step from truth to beauty, and undoubtedly Thomson followed them in this—that utility as a primary consideration should always be the basis of an artistic result. Thomson's one edifice of outstanding originality is Queen's Park Presbyterian Church. Of this Church Ford Maddox Brown thought it the finest modern Greek temple in Europe.

It was his latest work and is undoubtedly characterised by a freedom and a concession to the picturesque that is simply startling. There is a playful, yet restrained abandon about it that one could only expect from a genius. Long horizontal lines on the ground story, with simple pilasters, lead the eye along to the corners of the front elevation. It is here that one experiences a feeling of disappointment. We find we have been admiring not a building, but a façade, the back and side elevations are to narrow lanes, and are destitute of feature or detail. It is very obvious that such a fine and original conception demands an island site—although its perfect adaptation to its site in plan, its admirable contrast of lines, its proportions and charm of detail, does much to mitigate our disappointment. It would seem to be an impossibility to design a Greek façade without a portico, or without the Greek order. Here this is accomplished. A prominent feature is made of the main doorway, enclosing two imposts, which, with the architrave, support an enriched cornice. The upper part of the structure may be said to be Egyptian or Assyrian rather than Greek; four sturdy truncated columns support a frieze enriched with pateras. Above a cone-shaped curved feature rises, circular in plan, from an octagonal surbase. This crowning feature is designed with rare skill and subtlety and is finished with a simple iron cross. In the interior the original and striking character of the exterior is at once apparent. Its simplicity and severity are, however, greatly modified by a soft and harmonious colour scheme. Thomson employed a London decorator of great ability—Cottier—who evidently had a free hand; there is a perfect dream of colour, of Pompeian red, peacock blue, sage green and buff; profuse complicated stencilling, bound together with dirty white and sombre black lines. There is nothing bizarre. It is clear that the decorator conceived a scheme to produce certain calculated effects by a studied use of line and colour appropriate to a place of worship. The necessarily limited scope of this article precludes the possibility of offering more than a very imperfect description of this architectural triumph. I am indebted to Mr. Thomson's son, Mr. John Thomson, F.R.I.B.A., of Glasgow, for the following information. Alexander Thomson was born in Balfron, Stirlingshire, in 1817. He married a daughter of Michael Nicholson, who was a son of Peter Nicholson, a well-known writer on architectural subjects, and the architect of many important buildings in Scotland. Alexander Thomson came to Glasgow at an early age, and for a few years his brother George was associated with him in practice in that city. At that time to the student Greek architecture was not very accessible. The only literature of any value was a very good and a comprehensive work by Stuart and Revett. In modern executed work Greek was perhaps seen at its best in the scholarly work—Euston Parish Church—and in one of the Waterloo churches, the parish church of West Norwood, a building with a well-designed portico and lantern tower. Cockerell's buildings were certainly infused with the Greek spirit, especially in detail. All his work in London and in the provinces is designed with the most conscientious regard for the principles of classic. Thomson would often remark that "there are two great conceptions that I can truly say have been to me a source of inspiration"—St. George's Hall, Liverpool (Elmes and Cockerell) and the High School, Edinburgh (Playfair). During his lifetime and after Thomson's decease the influence of his work had a very marked effect on the architecture of the city of Glasgow.

Referring to the perspective pen-and-ink drawing which accompanies this article, it will be admitted that this doorway of Thomson's will always rank as a gem of design. On a flat mural surface the effect of a projected architectural feature of interest is obtained by cutting into the wall, and at its ends gaining relief to the short columns which support a fully-relieved and enriched frieze and cornice, while the raised and incised conventional ornament on the columns, frieze and cornice is enhanced by masses of plain mason work by which the doorway is surrounded.





Doorways in Glasgow. (*See p.* 576.)

ITALIAN TRAVEL NOTES—IV.

By THEODORE FYFE.

BOLOGNA, FERRARA, RAVENNA, RIMINI, ANCONA, AND URBINO.

In Italian travel, so many are out for the well-known and obvious places, that it is only the student who has leisure or who is determined to see lesser known but still beautiful and interesting places, who troubles to investigate between Venice and Florence, except perhaps at Bologna and Ravenna. Yet a fascinating country—the Trevisan—is open to him, immediately north of Venice, starting well east at Udine and going westwards to Castelfranco Veneto; served by a railway which takes in Pordenone, Conegliano and Treviso. This is the country of Titian, Giorgione and Cima, full of the joyous spirit of the Renaissance, and with the exquisite background of the Tyrolese Alps that is seen in the paintings of its great sons. All of these towns are picturesque and quite delightful. They are perfect in September, when the first fresh airs of autumn come down the valleys from the high hills.

Or, again, leaving Venetia, the traveller can take a southward course from Padua to Ferrara, some fifty miles away. Another thirty miles brings him to Bologna, the capital of Emilia, and the most important station on the main line from Milan to Bari and Brindisi. Let the student, if he can, swing on to the main line, avoiding the delights of Florence for a season, and investigate some of the fascinating places between Bologna and Ancona. Before Faenza, one changes at Castel Bolognese for Ravenna. Beyond Faenza are Forli, Rimini, Pesaro (for Urbino), and Fano. To see Italy, as one ought to see it, these places should not be neglected.

Bologna and Ferrara are among the most perfect towns that even Italy possesses. Bologna gets attention from many, but one fears that Ferrara is often missed. Yet it is just as distinctive and fascinating in its way as Verona, with an old-world charm that is Ferrarese and nothing else. Here Baldassare Peruzzi built one of his most superb doorways, and one can wander about its brick palaces and its Castello for days. The town is celebrated in the history of painting. Both Titian and Corregio painted there and the native masters include Dosso Dossi, Lorenzo Costa, Cosimo Tura, and Garofalo. The Palazzi Diamanti and Schifanoia are celebrated, and the Cathedral is one of the outstanding buildings of its class in North Italy. At every turn, in Ferrara, one comes across quite unspoiled and delightful work, having for the most part, as a background, a beautiful mellow brick, sometimes relieved with terra cotta. For early Renaissance work in these materials, the town is almost unrivalled in Italy.

Bologna is larger, more sumptuous, more modern, but also with great characteristics that are entirely its own. But if Bologna is modern, it is also ancient, more ancient than Verona. Long before Rome became a power it was the capital of Northern Etruria, and its Etruscan antiquities are remarkable.* It has also old covered ways like Chester, and many leaning towers of brick. The student will find plenty of interesting and sketchable mediæval work in churches like San Domenico, San Giacomo Maggiore, and Santo Stefano; the last a mine of interest, on a site which goes back to remote antiquity.

Of San Petronio, perhaps the less said the better. It is one of those vast umbrellas that Gothic Italy attempted in a style little understood, and one is thankful it was never completed. But it has one immensely interesting feature in the large collection of drawings by Renaissance architects for the completion of the façade, deposited in the Opera del' Duomo. Here are rapidly executed sketches by Baldassare Peruzzi, alongside of more careful drawings by Palladio and others, and a really finished drawing of the lower part of the façade which was actually completed. In Renaissance work, Bologna can show a splendid piece of open-air sculpture—the bronze Neptune by Giovanni da Bologna—and one of the finest palace façades in Italy outside of Rome, the Palazzo Albergati, by Peruzzi.

Very different from Bologna is Ravenna, but if we miss the antique touch, we get a wonderful atmosphere of Italian Byzantine work. Ravenna is a place that should be avoided at certain seasons, as the miasma from the marshes near the sea is unhealthy, particularly in the autumn. It contains six great monuments of Early Christian Art—the basilican churches of San Giovanni Evangelista, Sant' Apollinare Nuova, and Sant' Apollinare in Classe; the Mausoleum of Galla Placidia; the Mausoleum of Theodoric, and the extremely fine octagonal domed church of San Vitale. To these may be added the so-called "Palace of Theodoric," a rare example of Byzantine civic architecture. All of these buildings are interesting and beautiful, though the first-named is largely a matter of modern reinstatement, and there is much incongruous Renaissance work in San Vitale. Sant' Apollinare in Classe is outside the town, but must be visited, as for atmosphere and charm it excels all the others.

At Ravenna we feel the sea is near, but at Rimini—a much healthier place—we really get to the sea. It is also a very Roman sea, as the town is the rich possessor of two remarkably fine Roman remains—the arch and the bridge of Augustus. It is peculiarly interesting also to see the arch, which is a very fine fragment, in its bearing on the really great building of Rimini. This is the Church of San Francesco, clothed by the genius of Leon Battista Alberti with a Renaissance garment, a feat which he achieved in his great Romano-Renaissance way. In the façade, a princely work, he repeated the roundels in the arch spandrels which were used by the architect of the Augustan arch. The interior is alive with most beautiful early Renaissance detail, and the whole exterior and interior treatment astonishes one with the vigour and delicacy of its handling. One need see only this Church to realise the greatness of Alberti, though his Sant' Andrea at Mantua is even greater.

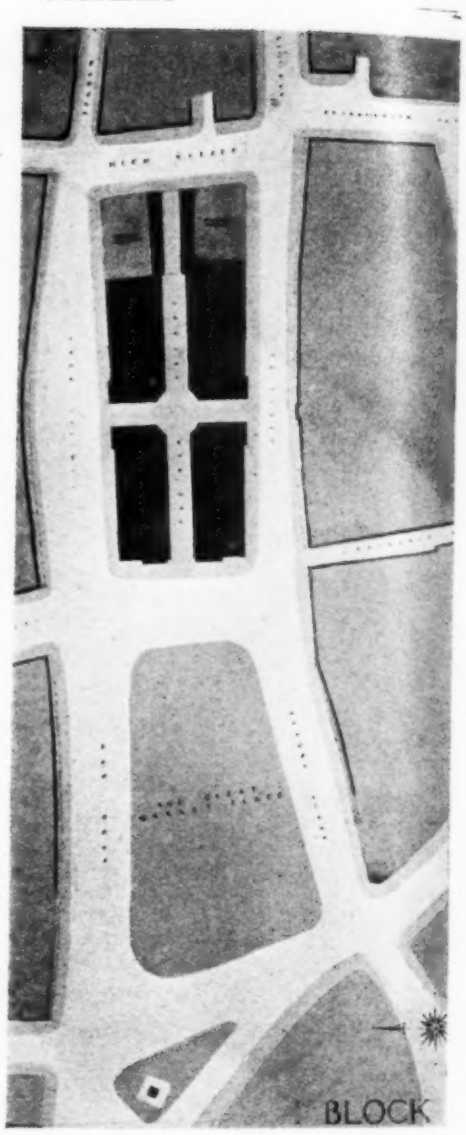
Further down the coast, on this fascinating main line, we come to Pesaro, the station for Urbino, but we will go on to Ancona, as it is more in our mood after Rimini. Ancona, like Rimini, has great Roman work, the finely preserved Arch of Trajan, forming a gateway to the sea. The situation of Ancona is most delightful, and it is a much frequented bathing centre. It has a splendidly situated Cathedral, perched on a hill immediately above the town. From its western terrace the views both seaward, and inland—towards the Apennines—are superb. The Cathedral itself has a quiet mediæval interior and a noble portal of the best kind of Italian Gothic.

When the student is at Ancona, he should visit Loreto, which is near, and where the great square outside the Casa Santa has some notable cloisters and a well-placed bronze statue. Apart from this, however, the church itself is well worth a visit for the ceiling paintings by Melozzo da Forli and Luca Signorelli.

To pass from these places to Urbino offers one of the fascinating contrasts that are often met with in Italian travel. The road to Urbino is (or was) by a romantic route traversed by a diligence. One penetrates into the heart of the barrier of mountains that separate the coastal towns from the plains inland. In a great degree Urbino is remarkable for one thing, but it is a wonderful thing, the palace of Duke Federigo Montefeltro (1444-82). Through the length and breadth of Italy one will wander far before another palace is found which is so completely representative of the great nobles of the Italian Renaissance. Its situation is romantic in the extreme; its materials externally a beautiful mellow red brick relieved by dressings of travertine, or an even finer stone; internally, a rare grey stone—pietra di cesana—for the doorways, and the most exquisitely detailed and inlaid panelling and fitments. The stone doors are all, in the main, of similar design, but the carving is various and extremely rich and fine. Much of the wood intarsia work is purely decorative, with a flat treatment of figures and foliage. A particularly fine example is the large door in the Sala degli Angeli, where the colour scheme consists of the dark brown ground, the old gold of the insertion, ebony, a greenish wood, and white—sparingly used—for the vertical stems of flower work. The total effect of richness in this door is something to wonder at.

The study of the Duke is a very small room, high-dadoed entirely with intarsia work—figure work in panels—and a secret door leads from it to one of the fine recessed balconies between the towers of the front, from which a superb view is obtained. The whole palace is astonishingly of a piece, originally mediæval, but blended from this imperceptibly into a pure and beautiful early Renaissance. As a town, Urbino has an old-world air, and has a place of pilgrimage, in the house of Raphael, well worth a visit.

* *See* "Etruscan Bologna," by Sir Richard Burton.



Scheme for the Development of the Exchange Site, Nottingham. (*See p.* 579.)

MR. T. WALLIS GORDON, City Engineer.

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ILLUSTRATIONS

Bristol Fire and Police Station Competition.

We give this week the first and second premiated designs in this competition, by Messrs. Ivor Jones and Percy Thomas FF.R.I.B.A., and Messrs. H. V. Ashley and Winton Newman, FF.R.I.B.A., respectively. Part of the assessors' report is given on p. 575, and the full result on p. 572.

Nottingham Building Scheme.

A scheme to erect a large arcade of shops, with offices, at a cost of £410,000, on the Exchange site at Nottingham, is under consideration by the Nottingham City Council.

The site comprises an area of approximately 4,260 sq. yds. On the western frontage is the Market-place, an open space of about five acres; on the Smithy-row frontage the site extends to the boundary of the land which will be occupied by the National Provincial Bank when these premises are rebuilt in connection with the widening of High-street. The site extends to the centre of the High-street frontage, with sufficient width to provide an entrance to the Arcade, and small shops on each side thereof. On the Cheapside frontage the site extends from the building recently erected by the Commercial Union Assurance Company to the Market-place frontage, opposite Exchange-walk.

The widening of High-street would be continued at its new width of 60 ft. Smithy-row would be widened, and the building line improved, and the irregular frontage line of Cheapside also straightened, and the thoroughfare considerably improved. On the Market-place frontage the building line would be slightly brought forward more satisfactorily to connect up the line of Exchange-walk with that of King-street and give a new building front at right angles to a line drawn from east to west approximately through the centre of the market-place.

The design of the intended new building is Renaissance in character. The Market-place front has been designed with a piazza, and two open balconies have been arranged at the first-floor level on the Great Market-place front.

An important feature is the provision of two large shopping arcades which would provide communication between the Market-place and High-street, and between Smithy-row and Cheapside. The arcades are 60 ft. high and have an effective width of 28 ft. The intersection of the two arcades is accentuated by the introduction of a glazed dome, surmounted by a tower and outer dome to add greater dignity to the building and importance to the sky-line, and at the same time to give the necessary water storage accommodation for automatic fire extinguishers.

The existing buildings on the site have a shop frontage of only 390 ft., whereas the proposed scheme offers a shop frontage of approximately three times the present amount, viz., 1,026 ft. A development on the lines suggested would concentrate the administrative work for the shops into the basement, and allow the fullest value to be obtained from the ground floor space.

A goods entrance for each shop is provided by the introduction of a wide subway under both the arcades, and from the subway an entrance to the basement of each shop would be provided. The subway would be fitted with two extra large goods elevators at the southern arcade entrance, and the use of these could be restricted to certain hours if found desirable. In addition, at the south-eastern corner of the site in Cheapside there would be an inclined road suitable for trolley traffic leading into the subway.

The whole of the ground floor would be constructed so as to allow the greatest possible scope in sub-dividing the area, varying from the small lock-up shop of say, 19 ft. by 15 ft. with a small basement, up to a large shopping store of say, 120 ft. by 50 ft., comprising five or six floors in height. Between the main piers the shop fronts would be arranged exactly as desired by the various tenants and the internal divisions for the shops would be as light as possible to conform with the usual fire insurance regulations.

The approaches to the upper floors would be grouped at the northern and southern arcade entrances in Smithy-row and Cheapside respectively. The upper floors would be finished in skeleton form only, thus enabling the accommodation to be let in tenancies varying from a small single office to a complete suite of offices, comprising three or four floors.

The building would be erected in Portland stone. The shop fronts and the upper windows would be in metal with uniform bronze letters on the shop fascias. The dome would be covered with lead. The whole of the building would be steel framed with fire-resisting floors and a sub-hollow floor to contain the various electric, heating, telephone, and automatic fire extinguishing services. The arcades would have a glazed roof of special construction, and the arcade paving would be arranged with ventilating and lighting panels to the basement subway.

The scheme has been prepared by the City Engineer, Mr. T. Wallis Gordon; Mr. T. Cecil Howitt is the architect.

MEETINGS.

FRIDAY, *April* 11.

Royal Sanitary Institute.—Sessional Meeting. At Town Hall, Newport.

Town-Planning Institute.—Mr. F. M. Elgood on "Buildings and Building Lines, including Zoning." At 92, Victoria-street, S.W.1. 6 p.m.

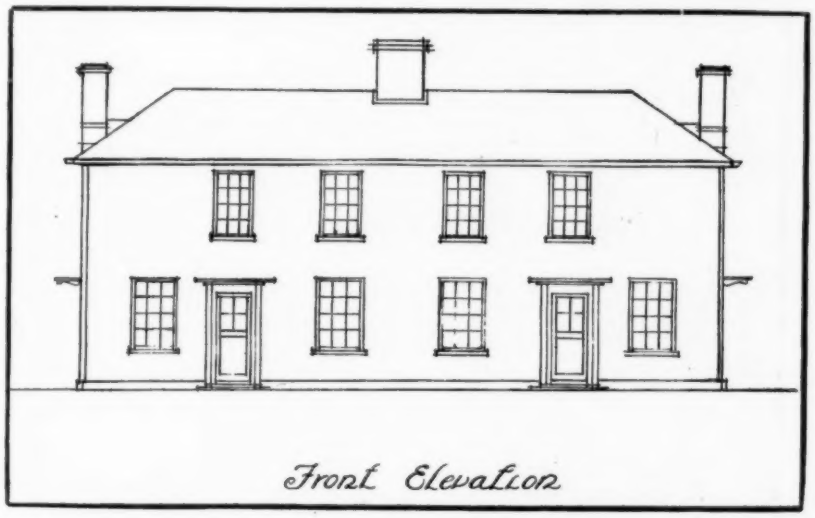
London Society.—Mr. J. Slater on "The Strand and the Adelphi." At 18, John-street, Adelphi, W.C.2. 5 p.m.

SATURDAY, *April* 12.

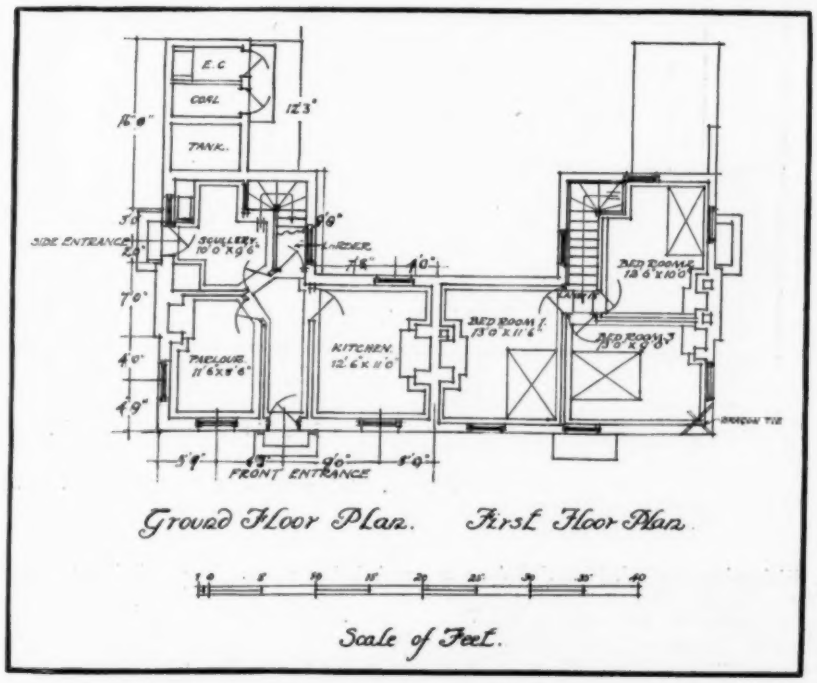
Edinburgh Architectural Association.—Visit to Trinity College Church and Canongate Church.

MONDAY, *April* 14.

Royal Institute of British Architects.—Mr. D. F. Slothouwer on "Modern Dutch Architecture. At 9, Conduit-street. 8 p.m.



Front Elevation

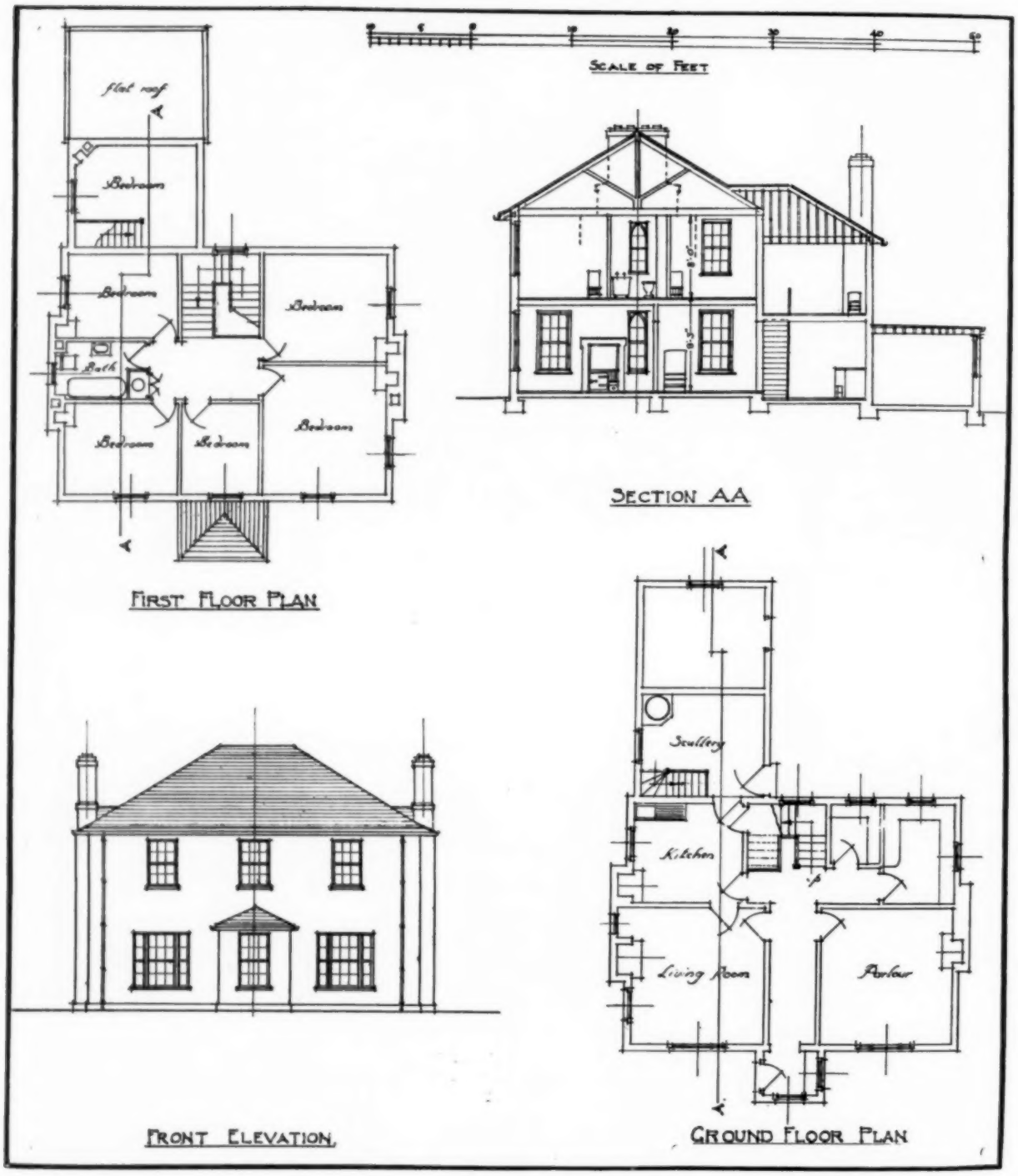


Ground Floor Plan. First Floor Plan.

Scale of Feet.

Pair of Cottages, Holy Vale, Scilly. (*See p.* 580).

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.



Dennis Farm, Reterth.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.

Messrs. Richardson & Gill, FF.R.I.B.A., are the architects for the work now going on for the Duchy of Cornwall. (See also pp. 584-7.)

THE PARISH ROOM, AT PRINCETON, is to be built on economical lines. It is to have hollow brick walls and Belfast roof trusses. The accommodation is: A large hall and retiring rooms on the first floor; on the ground floor, two reading rooms, billiard room, kitchen and boiler room. The building externally is to have stucco finish.

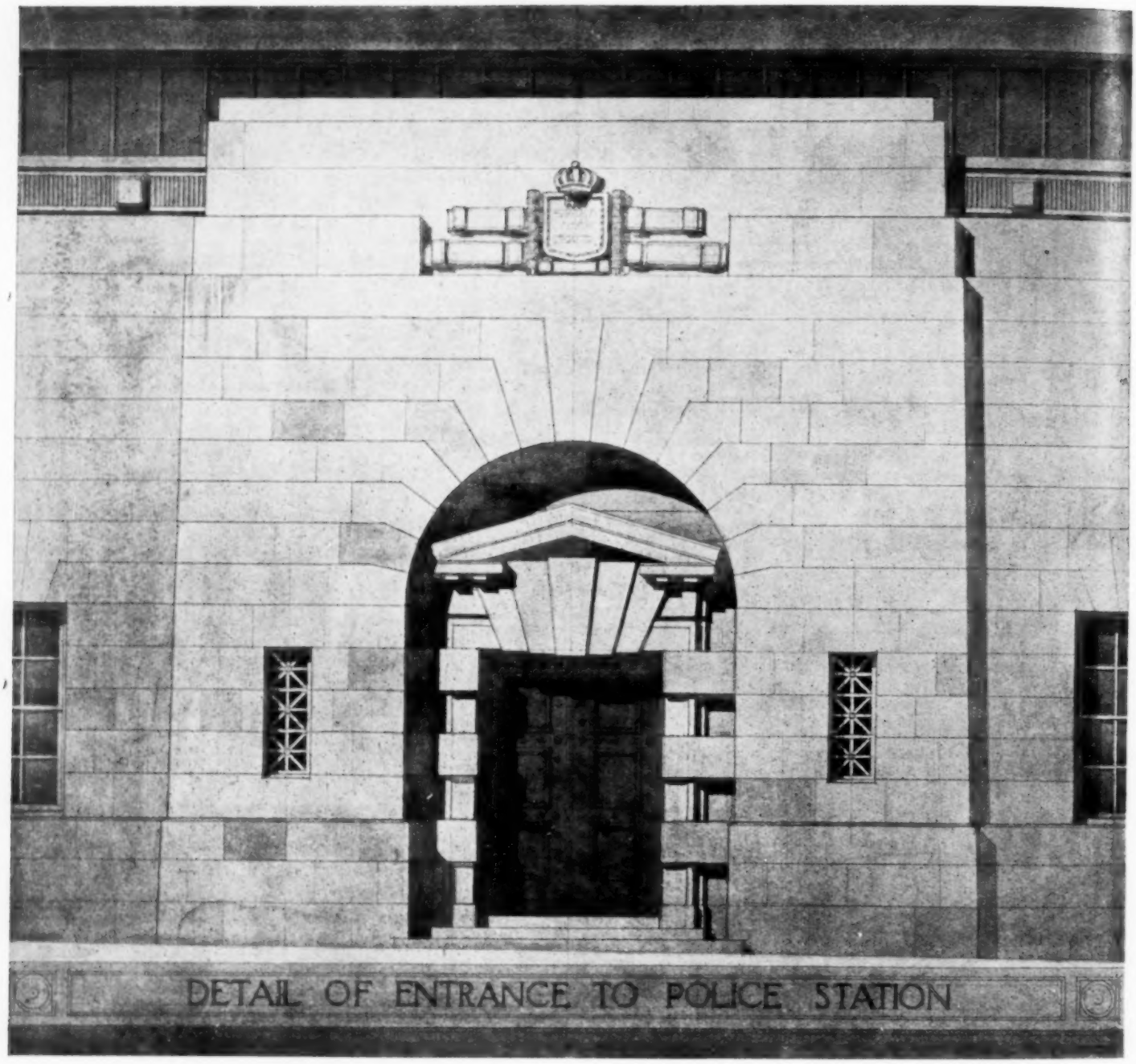
BUNGALOW ON THE POSTBRIDGE-ROAD.—This has been designed as a holiday house, built of local stone and roofed with Delabole slates.

BUNGALOW AT BROWNBERRY, is situated on the Ashburton-road, overlooking the falls of the Dart. This also has been schemed as a holiday home.

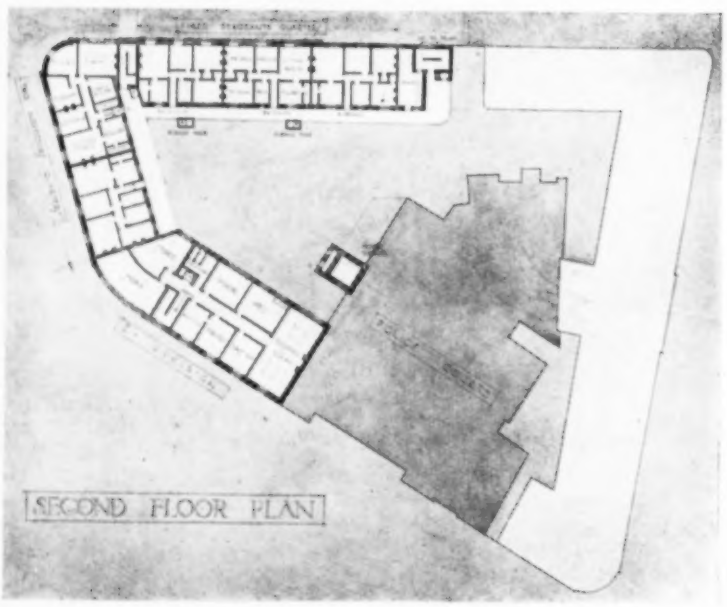
A PAIR OF COTTAGES AT HOLY VALE, ISLES OF SCILLY.—To be constructed of concrete blocks, slate roofs,; the cottages have been schemed to meet local requirements.

DENNIS FARM, MANOR OF RETERTH.—This design is typical of the small farmhouses built on the Duchy of Cornwall estate in Cornwall.

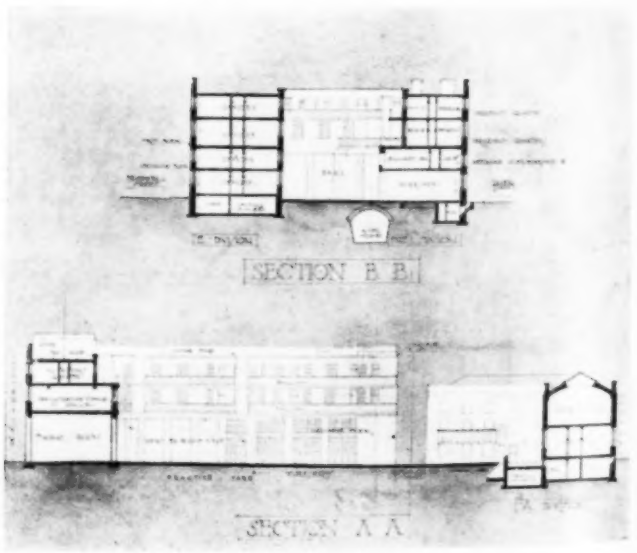
UNIV. OF MICH.



DETAIL OF ENTRANCE TO POLICE STATION



SECOND FLOOR PLAN

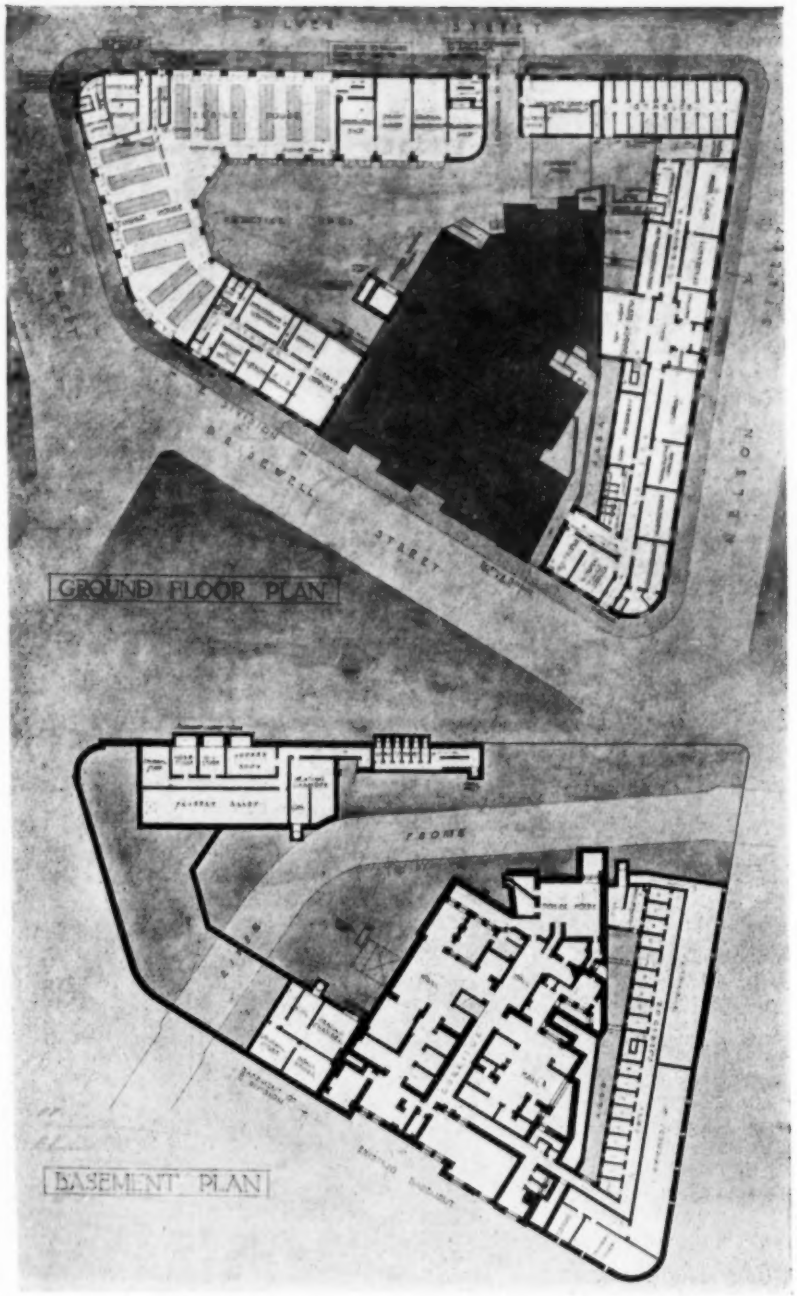


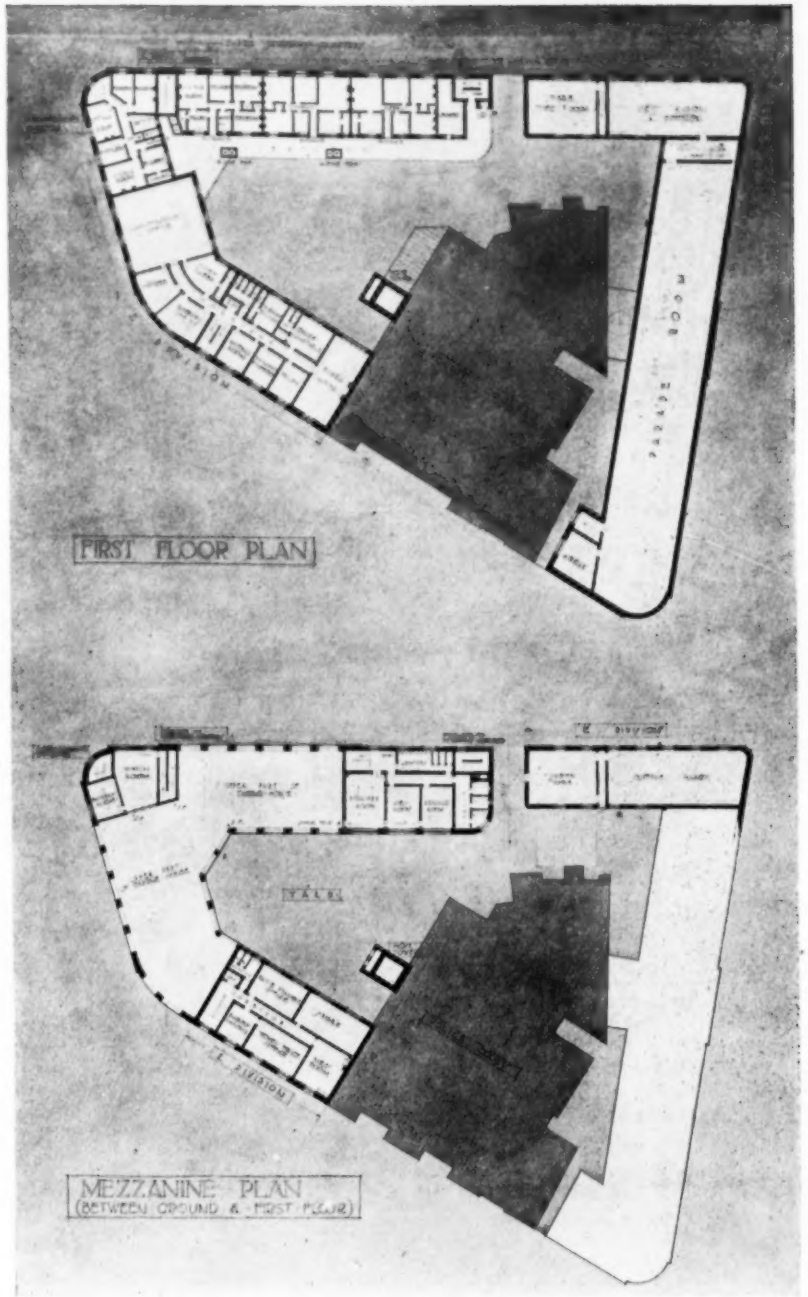
SECTION B.B.

SECTION A.A.

Bristol Fire and Police Station Competition.

Design placed first: By Messrs. Ivor Jones & Percy Thomas, FF.R.I.B.A. (*See p.* 575.)





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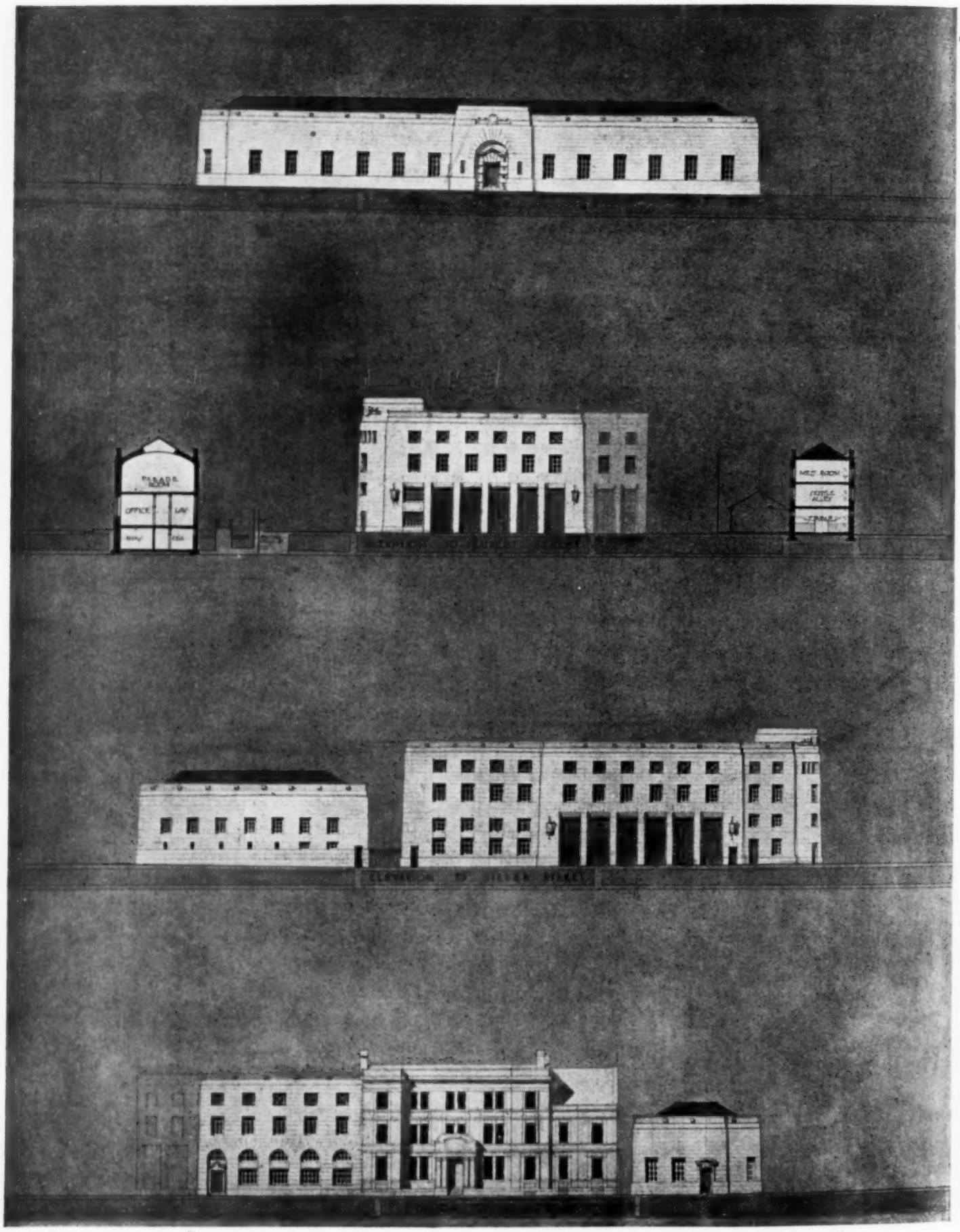
UNIV. OF MICH.



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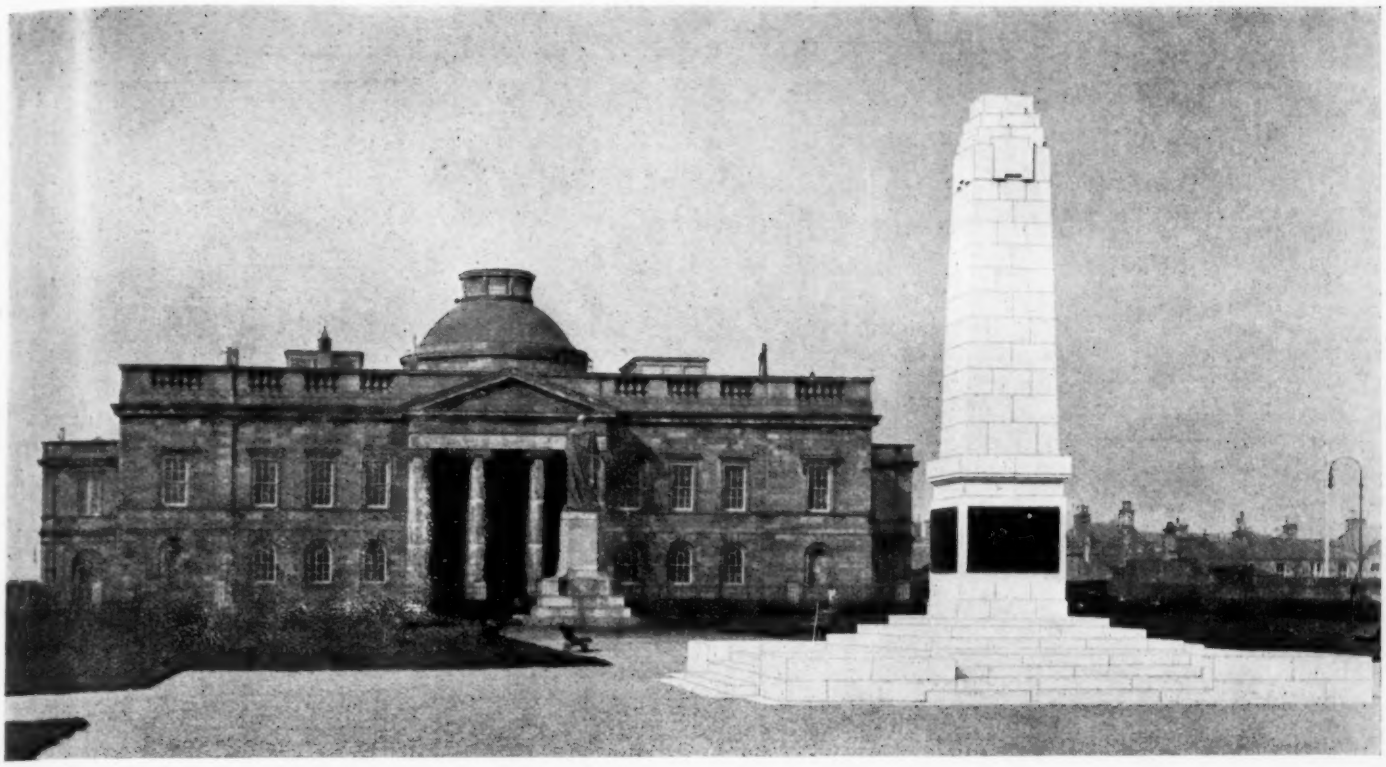
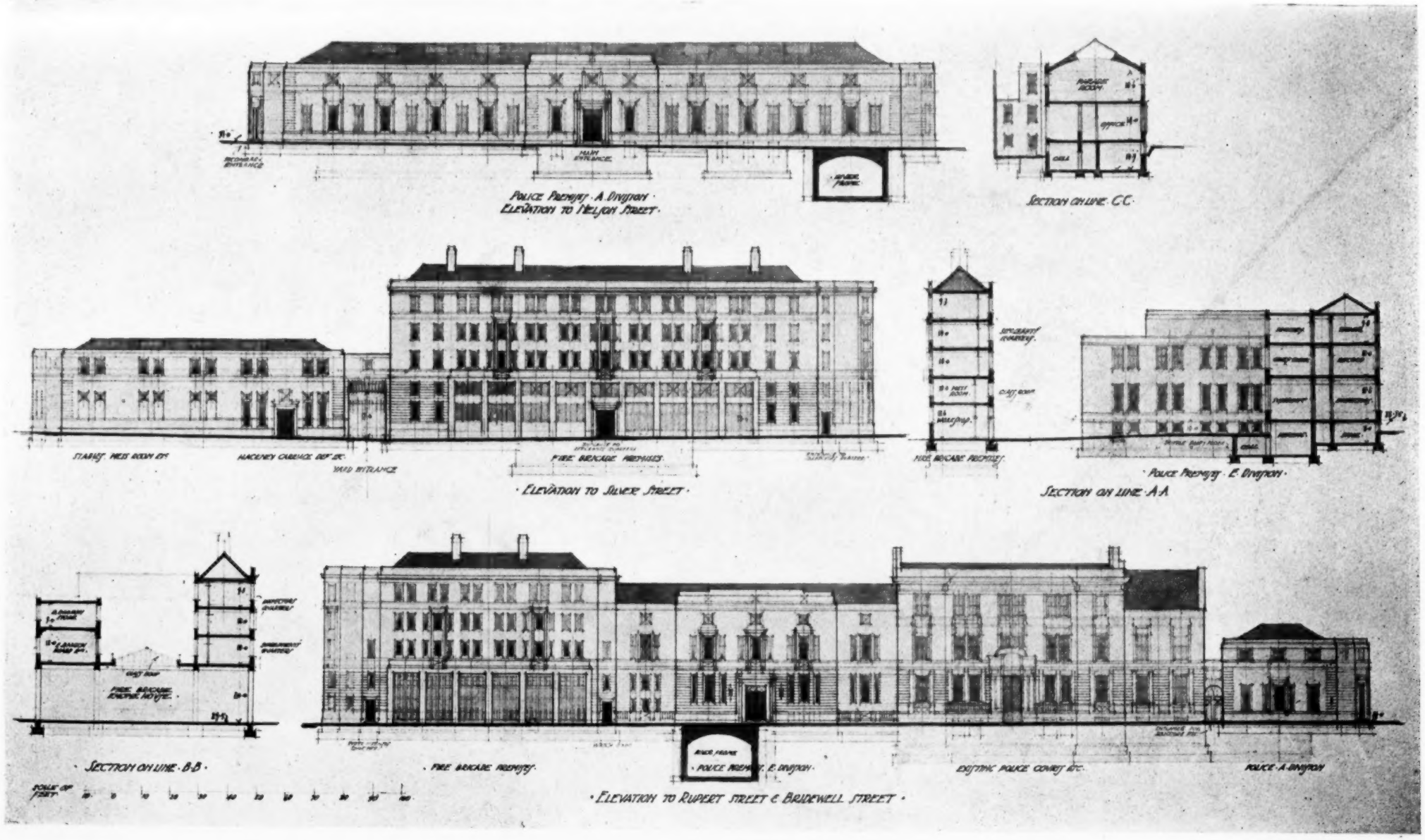


Ayr War Memorial. Mr. James K. Hunter, F.R.I.B.A., Architect.

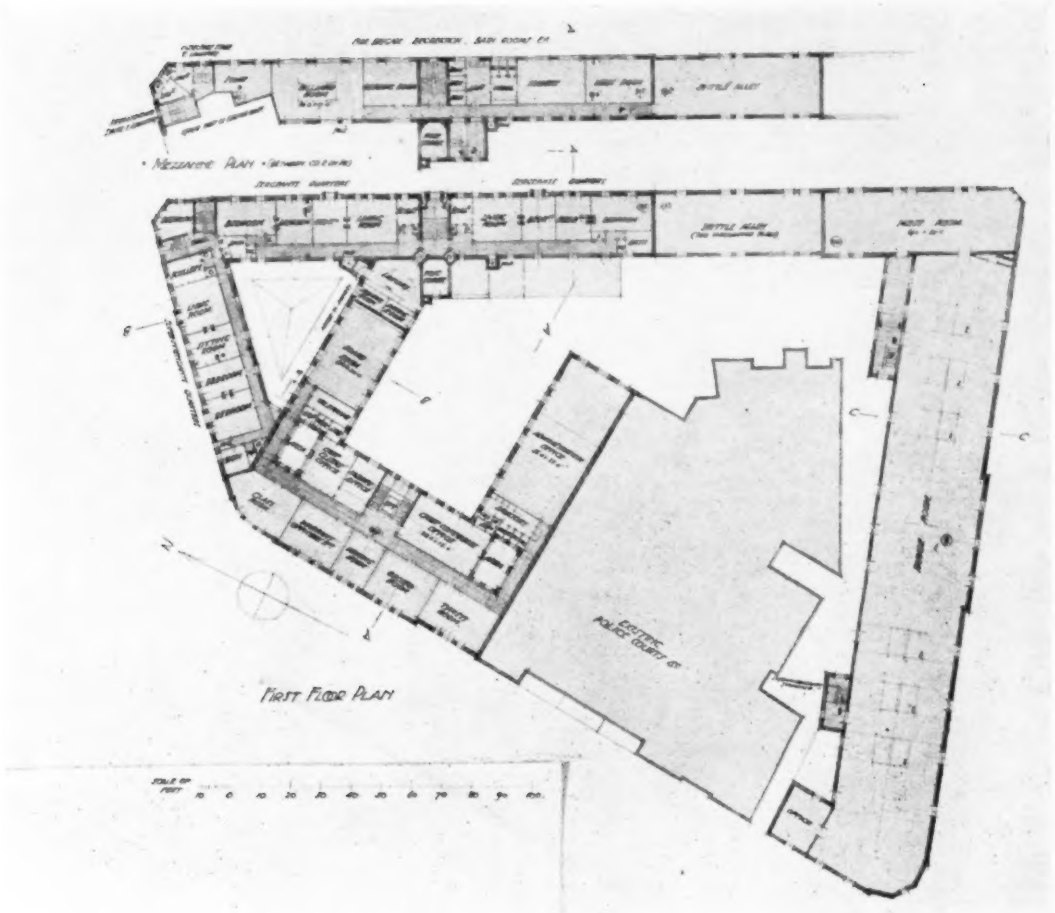
[This memorial is to be unveiled on April 13, in front of the Ayr County Buildings. It is of Creetown granite. The base is 25 ft. sq., and the height 27 ft. The granite was supplied by Messrs. Stewart & Co., Ltd., of Dumfries; the builders were Messrs. J. & D. Meikle; bronze panels by Messrs. H. H. Martyn & Co., Ltd.]

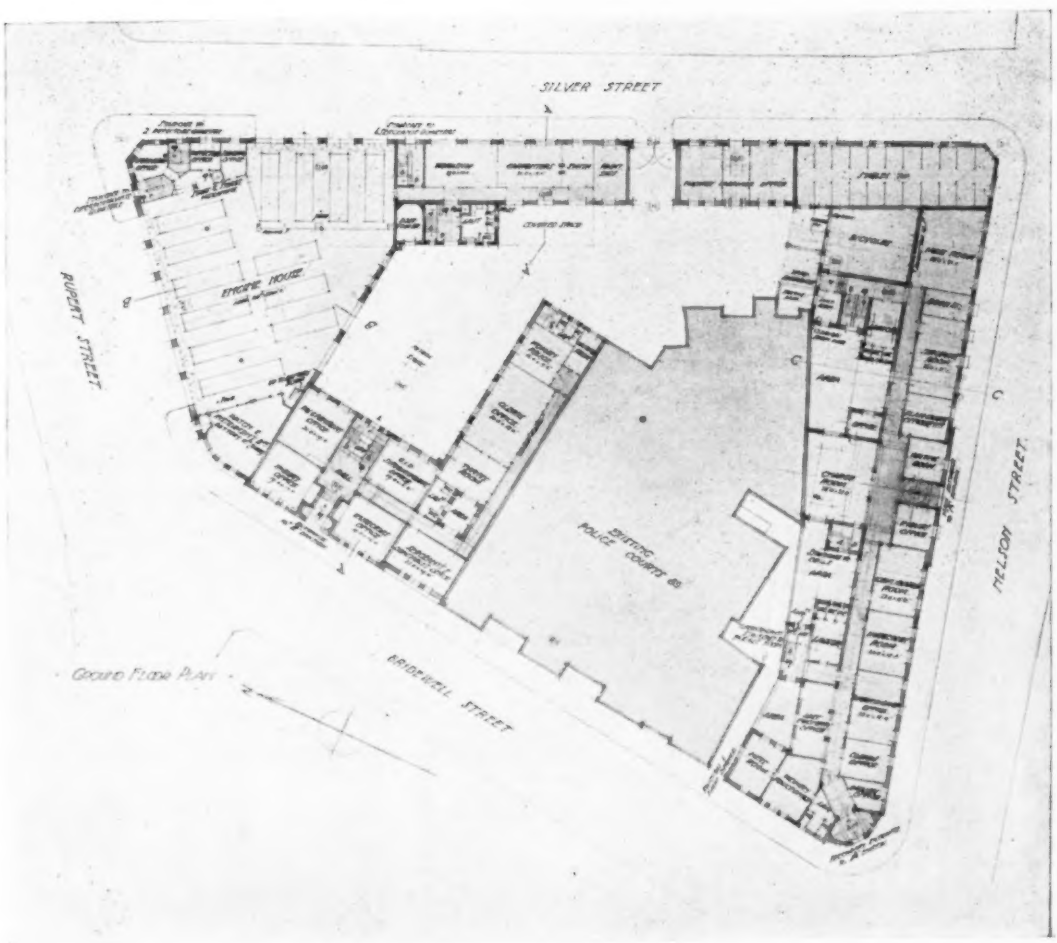

POLICE PREMISES · A. DIVISION ·
ELEVATION TO NELSON STREET ·
SECTION ON LINE C.C.
STABLES · MESS ROOM ETC
HACKNEY CARRIAGE DEPT ETC.
YARD ENTRANCE
FIRE BRIGADE PREMISES.
· ELEVATION TO SILVER STREET ·
FIRE BRIGADE PREMISES
SECTION ON LINE A.A.
· POLICE PREMISES · E. DIVISION ·
SECTION ON LINE · B.B ·
· FIRE BRIGADE PREMISES ·
· POLICE PREMISES · E. DIVISION ·
EXISTING POLICE COURTS ETC.
POLICE · A. DIVISION
· ELEVATION TO RUPERT STREET & BRIDEWELL STREET ·

Bristol Fire and Police Station Competition.

Design placed second: By MESSRS. H. V. ASHLEY & WINTON NEWMAN, FF.R.I.B.A. (*See p.* 575.)

UNIV. OF MICH.





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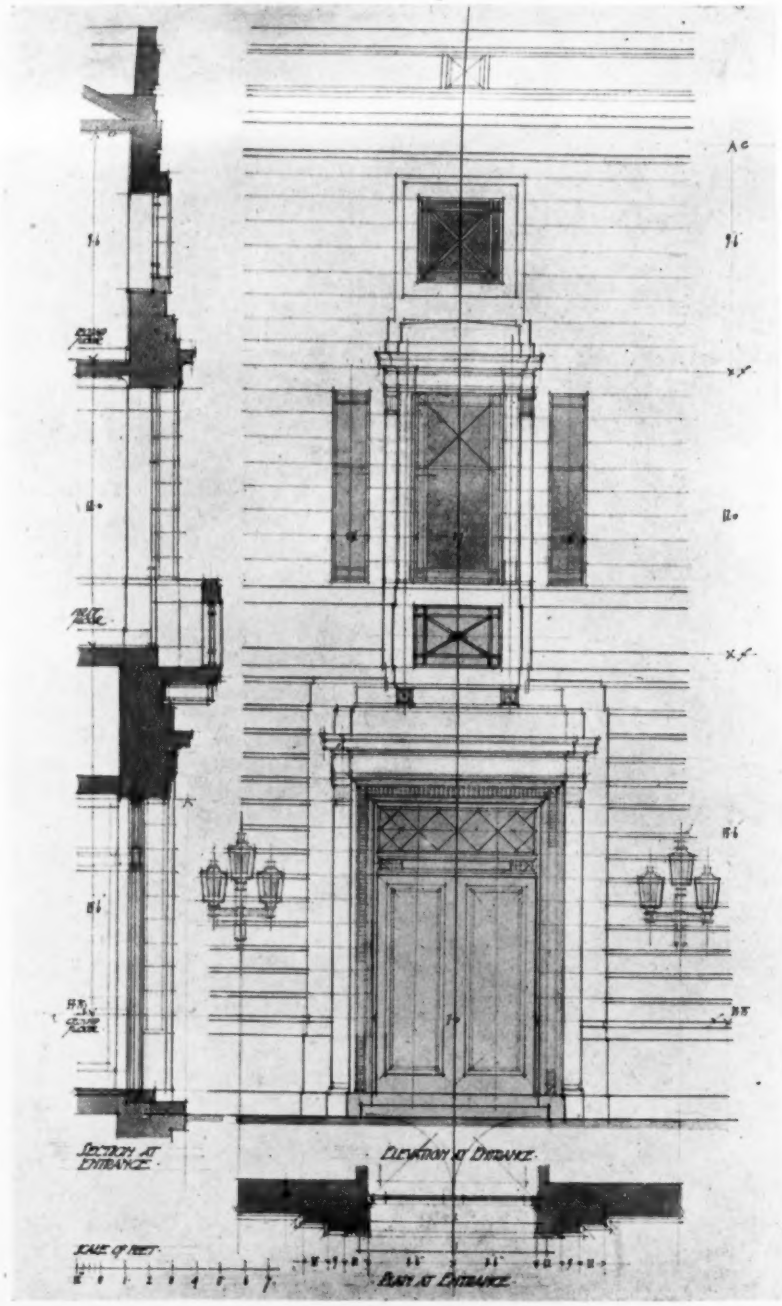
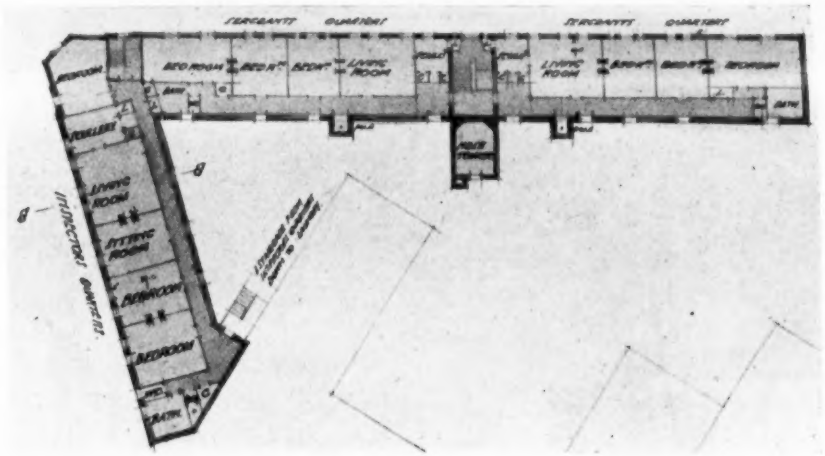
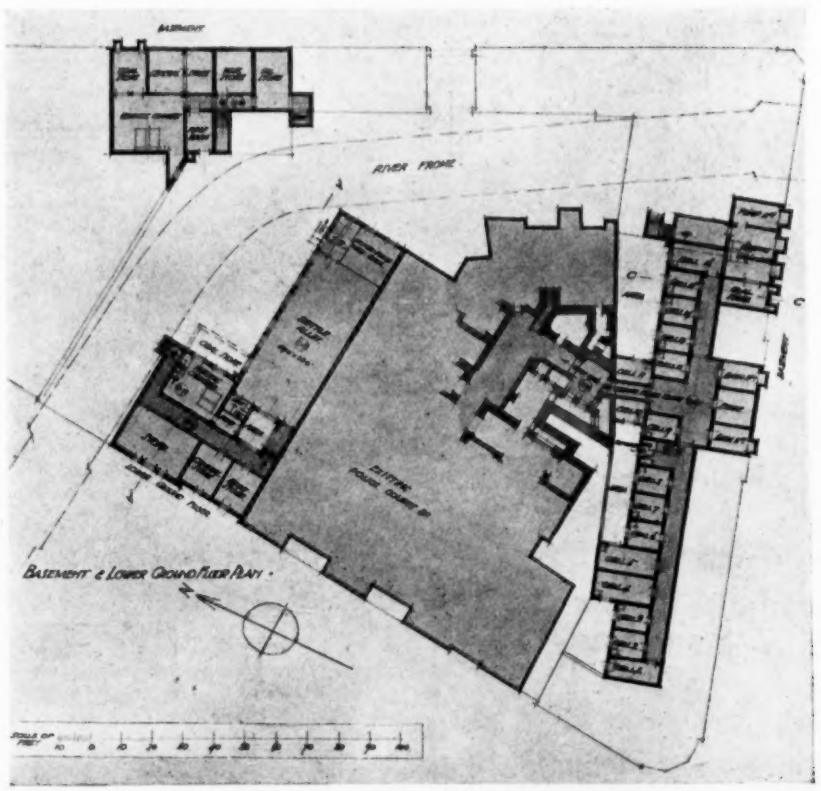
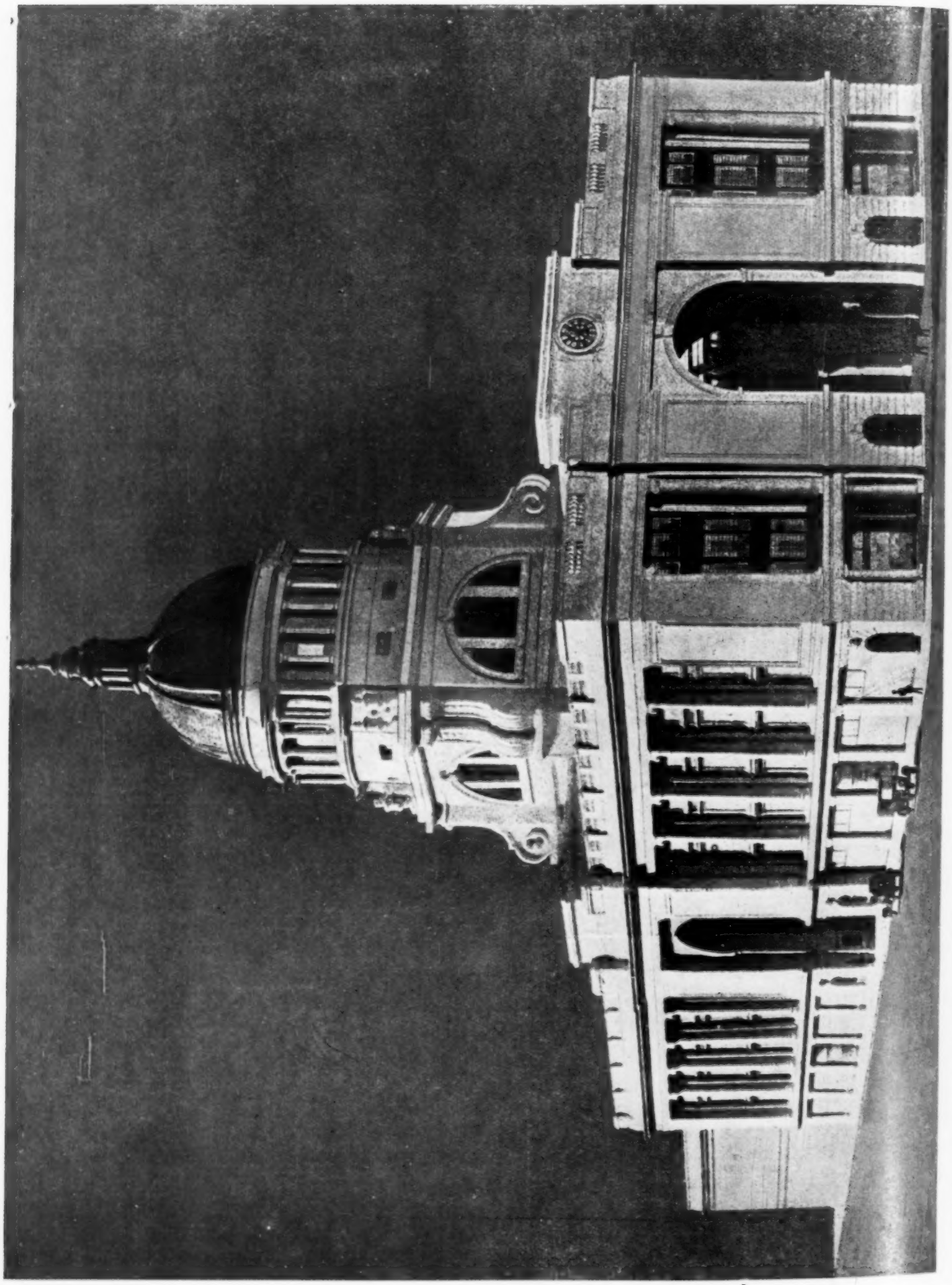




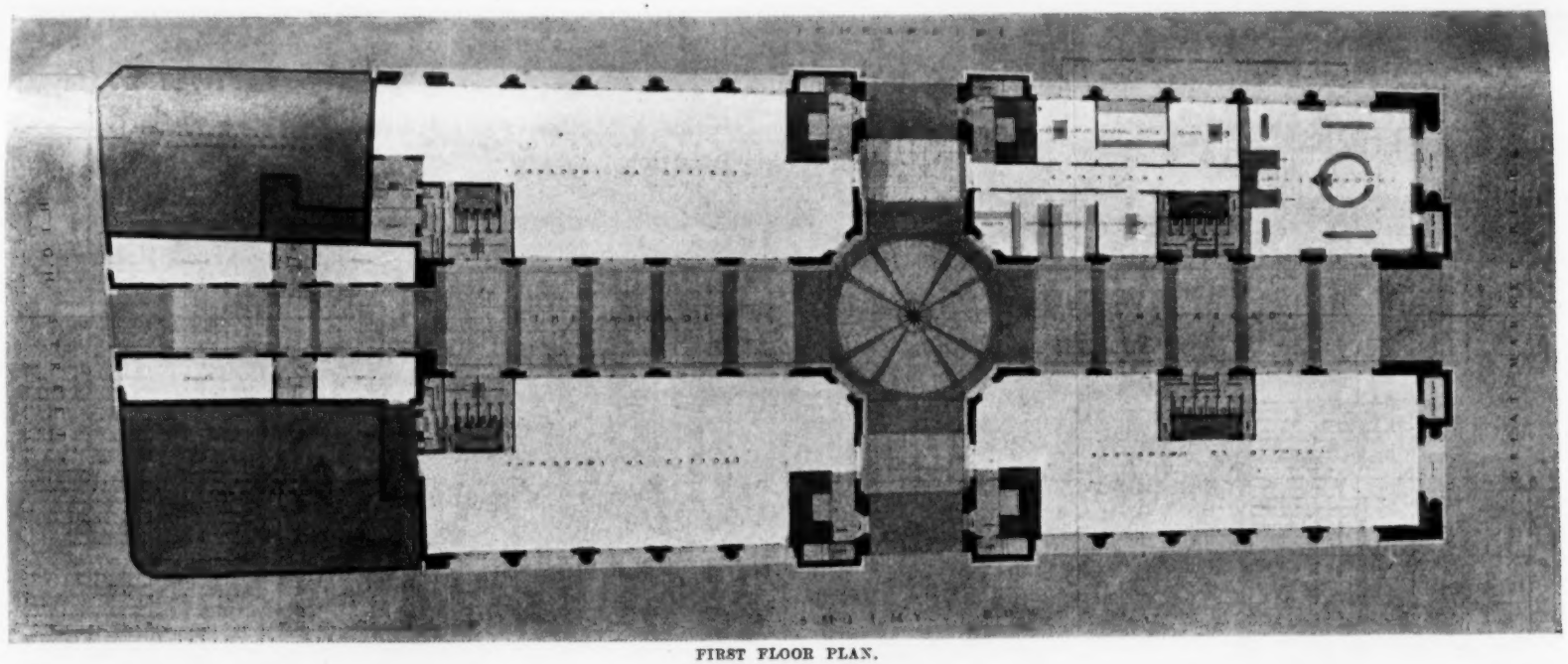
THIRD FLOOR PLAN.



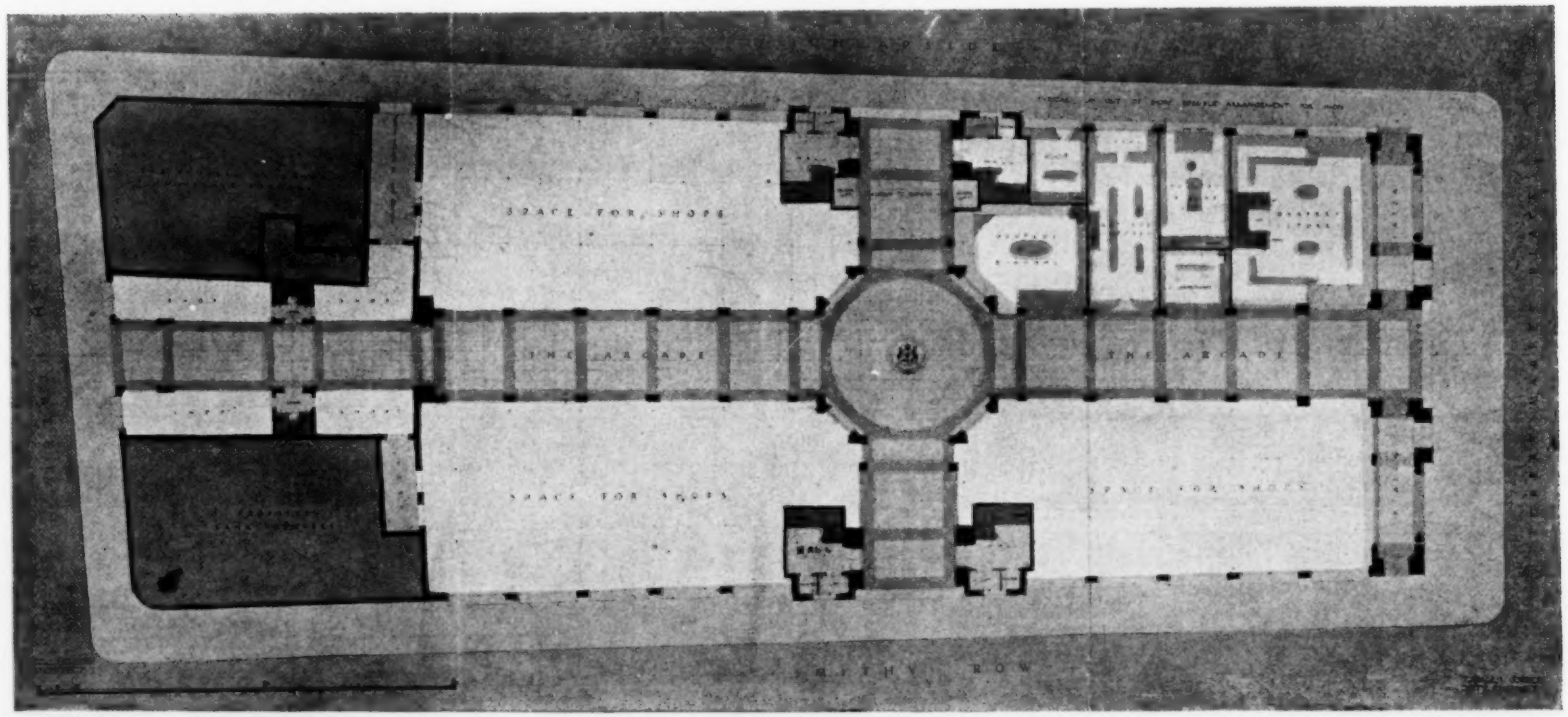
Bristol Fire and Police Station Competition. Design placed second: By MESSRS. H. V. ASHLEY & WINTON NEWMAN, FF.R.I.B.A. (*See p.* 575.)



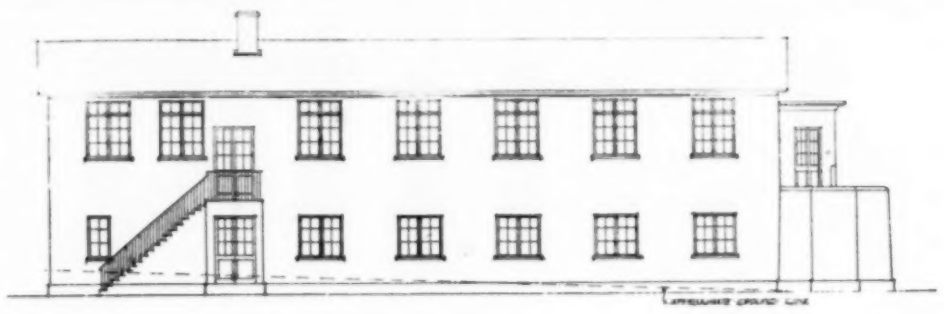
Scheme for the Development of the Exchange Site, Nottingham. Mr. T. C. Howitt, Architect; Mr. T. Wallis Gordon, City Engineer. (See p. 579.)



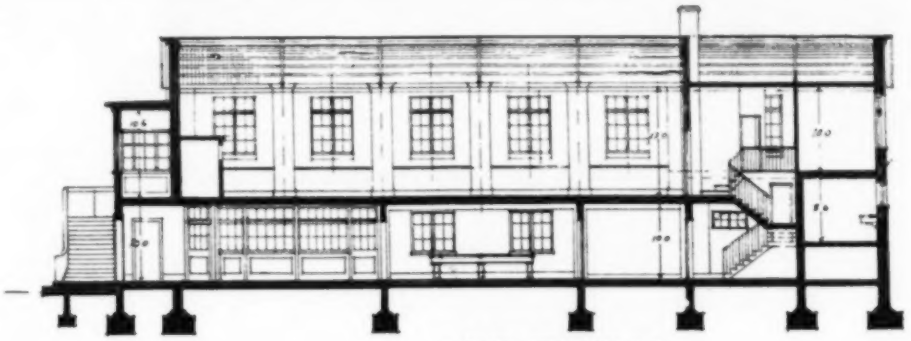
FIRST FLOOR PLAN.



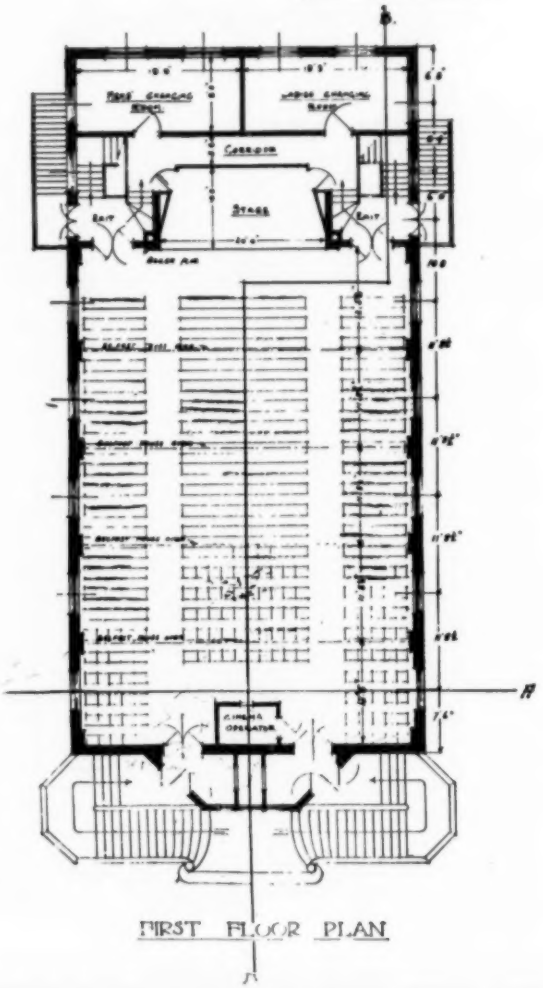
Scheme for the Development of the Exchange Site, Nottingham. Mr. T. Wallis Gordon, City Engineer. (*See p.* 579.)



SIDE ELEVATION



LONG SECTION B B



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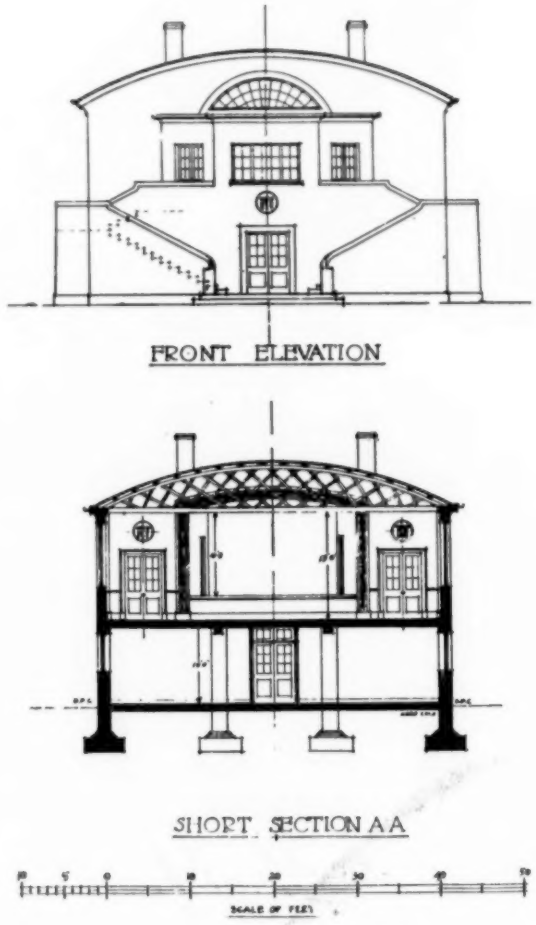
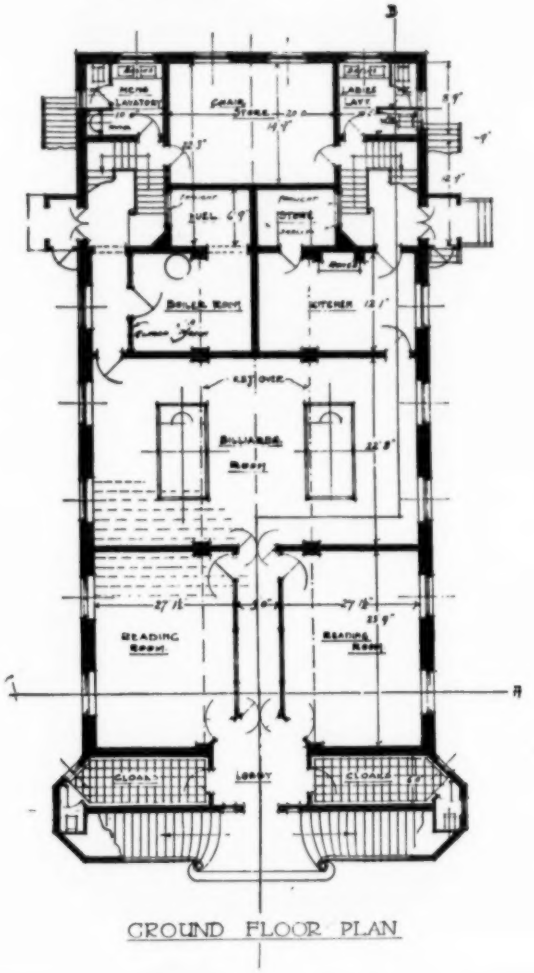


FRONT ELEVATION

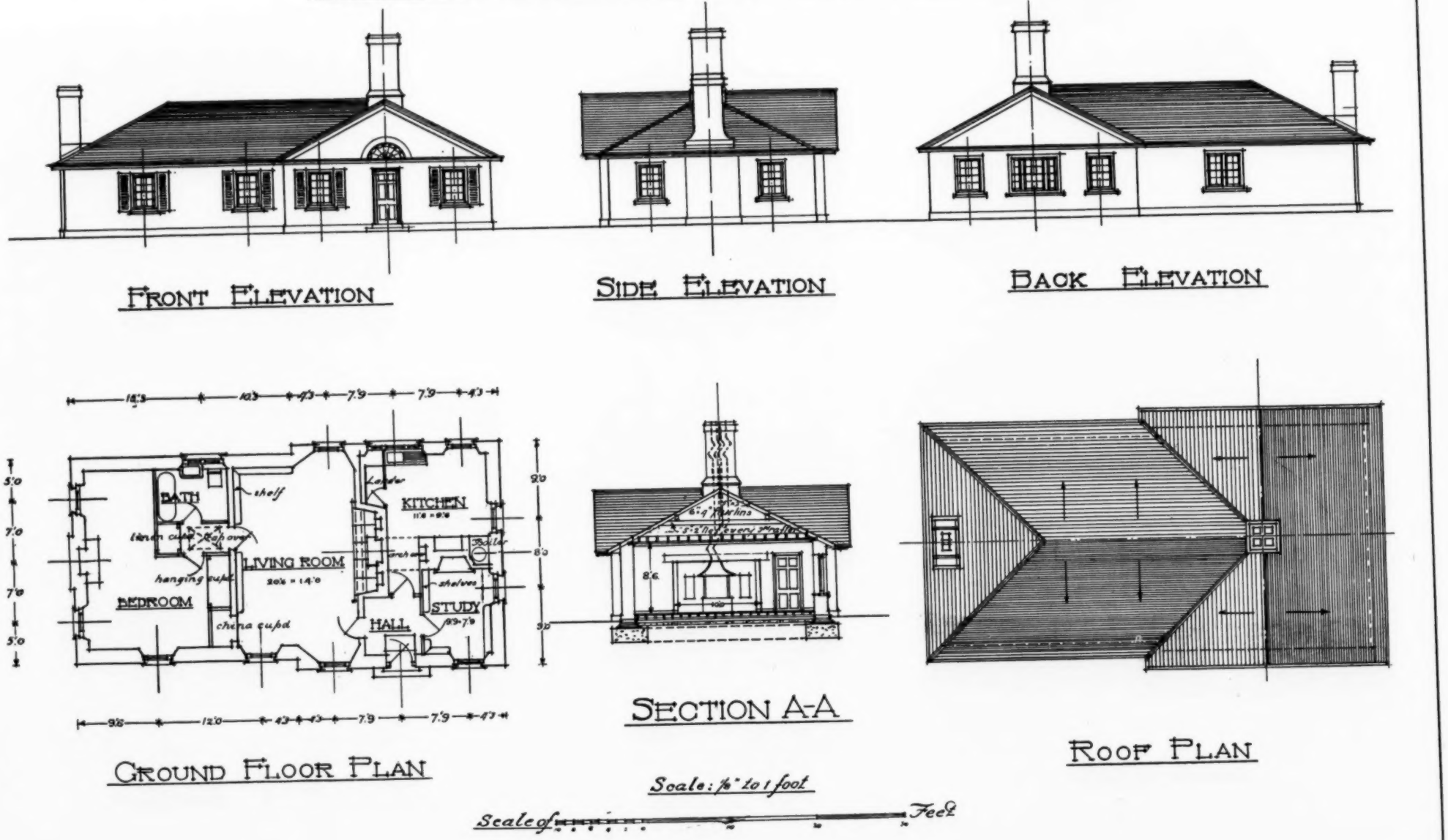
SHORT SECTION A A



GROUND FLOOR PLAN

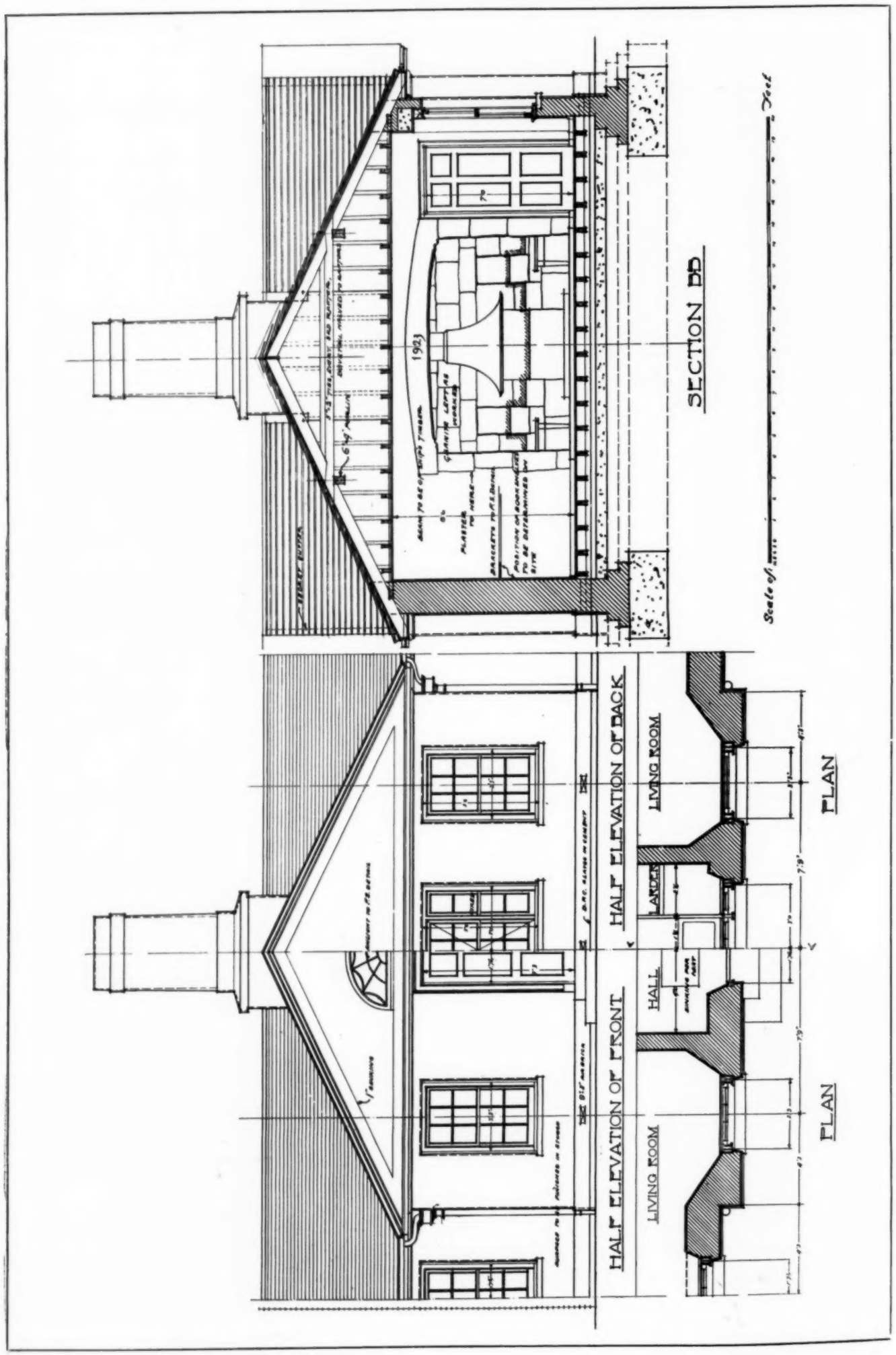
Parish Room, Princeton. MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects. (*See p.* 580.)

Parish Room, Princeton. MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects. (*See p.* 580.)



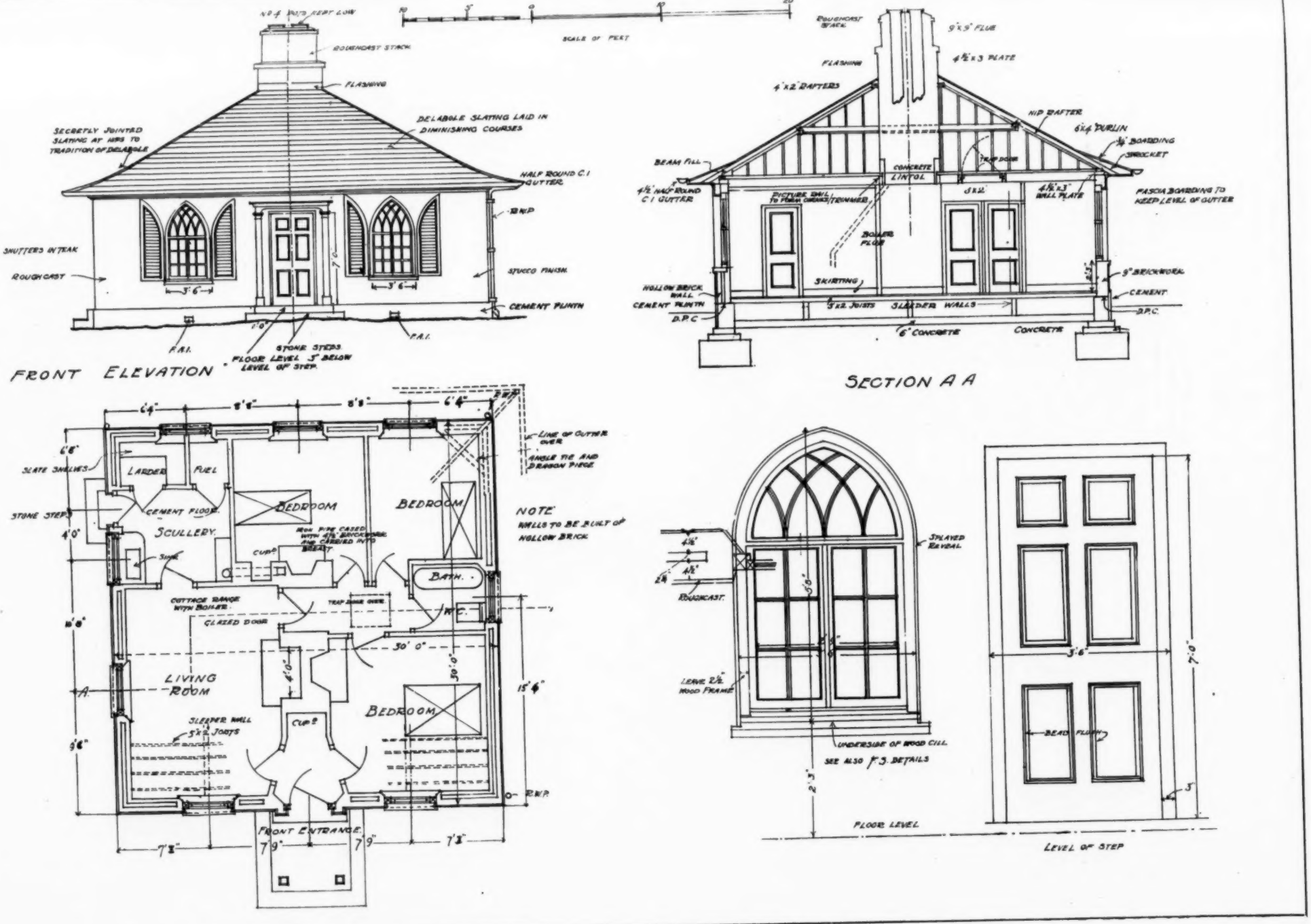
Bungalow on Postbridge-road, Princeton.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects. (*See p.* 580.)



Bungalow on Postbridge-road, Princeton.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects. (*See p. 580.*)



Bungalow at Brownberry. MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects. (*See p.* 580.)

TOWN-PLANNING CONFERENCE

In our last issue we gave a review of the exhibits at University College, where a Town-Planning Conference and Exhibition was held last week. In our last issue we also reported the first conference, opened by Mr. Raymond Unwin, on "Zoning Requirements of Town-Planning Schemes under the Act," held on Tuesday last week.

On Wednesday Mr. G. I. Pepler opened a discussion on "Technical Requirements in the Preparation of Schemes."

Technical Requirements in the Preparation of Schemes.

Mr. Pepler said there were present a number of students as well as those actually engaged in the preparation of town-planning schemes, and he had been asked to talk about the actual presentation of town-planning schemes. On the wall they would see a map showing the notation which had been adopted by the Ministry of Health. Many experiments were made before they arrived at this map. The first point was to define the area of the scheme, and this was done by a blue border line round the area, but not in it. The latter point was of importance, because if the border line was placed inside the area it might conflict with other colours on the map and lead to legal quibbles. The second idea was to have ground colours for densities and hatches for uses. The parts of the area for industrial purposes were always indicated by purple, and from correspondence he had had with people in America, Germany, and other parts of the Continent it would seem that purple was now very generally adopted as the industrial colour. The methods of hatching indicated the restrictions as to industry. Where they got grey and purple it meant that industries were allowed, but that this was not the predominant use. The purple hatching indicated that industrial use was predominant; whilst the grey hatching brought in shops and other things. The parts coloured grey showed they were purely residential. The white area denoted that the predominant use was residential, but they could zone subsequently on a smaller scale for particular uses. Red represented the roads, and the roads were numbered, which was a matter of importance. The green wash indicated existing private open spaces and proposed public open spaces were shown with a green ground and green hatching. For allotments they had a verdi sienna wash with a green hatching across it. The best plan in starting to plan an area was to consider the sequence of events, and the first thing to do was to make a civic survey. Even if they did not make a civic survey at first, they must carefully scrutinise the area and gather information about it; but personally he thought a fairly thorough civic survey was essential, for it seemed presumptous to lay down lines for the future development of a place before knowing all there was to know about it. It was perfectly amazing how little one knew about his own town until one came to set down the facts and study them. It was like many of the problems put forward for the solution of the London traffic problem—the suggestions generally were to add to the facilities, but they would probably add to the trouble. To arrive at a conclusion of a problem they had to get at the causes and then the difficulties might be removed. Generally there was a great deal of data available for a civic survey, but it had not been put into graphic form and had not been prepared. Professor Abercrombie told him that when he undertook the civic survey for Sheffield he found a great deal of information available at the Town Hall, and that he acted as a kind of liaison officer and picked here and there and got a complete picture. Of course they might arrive at wrong conclusions. For example, they might imagine that with a density of houses they would always find a greater percentage of disease and infantile mortality, but on comparing the maps it was found sometimes that was not the case. That led to further examination and they might find disease due to the fact that the site was low lying and was always under a smoke cloud. They might find that the wages question came into it and a number of other things. In London he got from Scotland Yard a chart of the fatal accidents in the streets complete for ten years, and he hoped to arrive at some conclusion as to the cause, but he confessed that so far he had been unable to. The theory of the police was that fatal accidents occured where they got blind corners on an open street with fast traffic. He had hoped that the theory was right, because that was a matter which might be rectified, but it did not prove to be the case when they were plotted out. The symbol he used was a black cross, and the map in many places looked like a black boarded fence. Then he compared it with a map which showed the position of all the public houses and found there was no incidence between them, and it really seemed to confirm the proverb that Providence looked after the drunkard. Well, before they had completed their civic survey they would want to get on and fix the area, and in regard to that he recommended them to take a wide view and be sure they included enough. It was a simple matter to discard part of an area if they had taken too much, but not so simple a matter to add to it if they wanted to include in the scheme land outside the area of the authority for whom they were acting; they would have to get the permission of the Ministry of Health, and to get it they would have to show good reasons. The best way was either to get agreement with the neighbouring authority and establish a Joint Town-planning Committee, and prepare a statutory scheme, or for a much larger group to appoint a Joint Town-planning Advisory Committee. In this matter it was essential to have co-operation, and it was better to do it by joint action. Some areas they might have to exclude. The built-up area of the town, if it was a big town, seemed to be not really within the scope of the Town-Planning Acts, but, all the same, they would plan it, and there were other powers under which they could proceed with regard to the built-up area. In planning, they should first make a diagram, and think of what they would like the town to be. A balance should be kept between the amount of industrial land, the population they were likely to get, and the inter-communication. Let them put down on paper what they would like the town to be, and then see what was practicable. Then they must deal with the zones—it was wrong to deal first with transport and then with the character zoning. Having fixed the uses this would affect all manner of things, such as the laying of water mains, sewage pipes, and the supply of light and power. The general practice was in the first stage to put down only the predominant use, and more detailed zoning could be done by supplementary orders. At Birmingham they showed the big roads on the official map, but in the office they had a map all filled in with schemes, so that if anyone came along they were ready and could make suggestions. With regard to density, the general average seemed to be twelve to the acre. In some places, there seemed to be an attempt to keep the districts select by limiting the number of houses to three or four to the acre, and that was all right provided it was in the public interest, as very often it was. Height zoning had been treated very simply in the Model Clauses by taking an angle of 56 degs. in a mixed area and 45 degs. in a residential area from the centre of the street. So far the question of dealing with the backs had not been dealt with, although that was of equal importance. For open spaces, the diagrammatic method was to be recommended. His personal opinion was that they wanted one acre for every two hundred people, and they should have some flat and dry spaces on which football could be played. In some towns the question of preserving land for agricultural purposes was being tackled, and he thought very wisely. Mr. Pepler dea also with the question of the preservation o wedges of land, and pointed out that these things should be tackled before communications were dealt with, otherwise they would simply make such land of building value. In conclusion he touched on the question of roads and urged that the planner should carefully survey the proposed roads and should preserve an adequate width of footway. With a road 80 ft. wide, they would have to duplicate the service mains. This was being done under the footway, and the Surveyor of Leeds had come to the conclusion that in such cases they must reserve 20 ft. from the edge of the kerb to the fence of the house. Grass margins should not be less than 5 ft. width, for otherwise people would not recognise them as such.

Mr. F. G. Elcegood said it would be an enormous advantage when eventually they arrived at a decision to have a uniform method of notation. If the Minister of Health was sufficiently severe he supposed it could be brought about comparatively easily for Great Britain. Whether they could by some international action get the same notation used in all town-planning schemes he did not know, but it would be a pity if strong efforts were not made to secure uniformity at the earliest possible moment. He hoped they would be able to provide for some definite co-ordination of schemes in groups of authorities, so that it was not left to have greater densities only where an authority would have it. The densities should be where they ought to be. In regard to London, for instance, it was not right to put the large number of working class dwellings all together in the East End, when there were magnificent undeveloped areas on the northern heights. He knew it was a question largely of transport, but that was not an insurmountable difficulty, and town planners could only justify themselves in so far as they were able to solve these combined problems. They must get away from the idea that workers insisted on being near their work; although he agreed there was a good deal of truth in the statement.

Mr. J. A. Rosevear thought that many who were now carrying out town-planning schemes had not made a proper civic survey, and some had omitted it altogether. As to the enlargement of areas, he found in the West Country they were very diffident about looking over the fence. One city he knew of was surrounded by rural district areas; but would not consider the enlargement of its boundaries or the bringing in of the rural district councils, although it seemed to him it had difficulties which could be got over by such means. The question of densities in suburban London was a great difficulty at the present time. They would all agree that town planning to be successful must proceed with the good will of everybody, and at the present time it would do no good if the idea went forth that town planning would preserve land for others than the working classes. Anyhow, the London County Council was planning its Roehampton Estate for the working classes. As regarded open spaces they talked a good deal about compensation, but often forgot the point of betterment.

Mr. C. N. Beale said he was surprised to hear that whilst a ten-foot unit might be necessary in a narrow road with one stream of traffic in each direction, yet when they got to wider roads the traffic width might be less. Twelve years ago he investigated the question for himself at Calcutta, and came to the conclusion that in a wide road with three lines of traffic going in the same direction they required a greater margin, and they must allow at least 30 ft.

Professor S. D. Adshead said Mr. Pepler had given a mass of information, but had not emphasised the importance of some sort of development of the technical plan between the preparation of the civic survey and the preparation of the map which had been described. Mr. Pepler had referred to a plan of the local authority which was in no sense a legal plan, but he would like to know what his real views were as to the preparation of something in the way of an imaginative and non-statutory plan for the use of the Council previously to plunging into the hard legal issues. There would always

le controversy on the subject of placing the working classes in the best residential districts, and he was in sympathy with Mr. Elgood in saying it was not fair to drop down millions of working class people in the most uninteresting parts of a great district. He believed that a great part of what was called the spoiling of good class areas was not the people living in the houses but the poor architecture.

MR. PEPLER, in reply, said the most important thing was to have a policy about their town planning. They had to think out not only where things should be but the kind of appearance they would like the town to have. He did not refer to the enlargement of a town; what he did suggest was co-operation. His experience as to traffic units was different from that of Mr. Beale. It was true he omitted to deal with the development plan, but he had that in mind when he spoke of the diagram, which included the whole town.

Regional Development.

Thursday's discussion was on "Town-Planning Schemes in Relation to Regional Development."

The chair was occupied by the RT. HON NEVILLE CHAMBERLAIN, M.P., who expressed his conviction of the importance of town-planning, and referred to the Birmingham town-planning scheme in which he was interested some twelve years ago. As a result of the experience gained in Birmingham he urged that in all town or regional planning schemes the greatest elasticity should be aimed at, because it was quite impossible to know what the requirements would be in, say, twenty years time. From the small beginnings of town-planning ideas had developed until it was now realised that regional plans were necessary to embrace many towns and cities; he thought that very soon the whole country would be divided into regions for the purpose of planning, so that ultimately the plan would not be a town plan but a plan for the whole of the country.

MR. I. G. GIBBON said people who talked glibly of garden city development as though it were the end of town-planning were really a danger to town-planning. Town-planners were often too conventional and unstimulating; but it should be realised that that attitude was a real danger in town-planning where there was so much to learn and where the surface had as yet so far only been scratched. The first object of any town-planning scheme should be the proper and most advantageous provision of the means of livelihood; business, not housing, was the kernel of town-planning. When any community acquired even a modest measure of prosperity it devoted a considerable amount of attention to the decorative elements of its existence; that was another real danger, and it had already been found to be a danger. The decorative element, which was quite secondary, often received so much attention that the problem was seen out of focus, with the result that various solutions or solutions which were only half true were produced. That had had an unfavourable influence on the development of town planning in this country; it had thrown things a little out of the straight course, and it would take some time to put them right. Town-planning in this country started primarily as a housing matter; housing, of course, was one of the chief requirements of town planning, but it was not the only one. Attention had been concentrated on housing development to such an extent that comparatively little attention was given to the urgent need of the ready access of the worker to his work, with the result that the transport problem had been so acute that it was hag-riding every town and everyone was becoming impressed with its urgency, but its solution was very far away indeed. If business were the kernel of town-planning it followed that the proper unit for the town plan was the business unit, which was the economic unit. It might well be that in some areas the economic unit coincided with the area of the local authority, but, largely owing to the industrial development of the last hundred years, that was rarely the case, and in most instances the economic unit extended much beyond the area of any local authority. The economic unit generally covered the whole of a district or the whole of a region. Thus the need for regional planning was obvious. In some ways the progress made had been satisfactory, and in some ways unsatisfactory. It had been satisfactory in the progress made in forming joint committees up and down the country, and there were now twenty-five such committees. The Manchester Joint Committee represented 89 local authorities; the Birmingham Committee, 64 authorities; the Leeds and Bradford Committee 51 authorities; the smallest committee was that on Tees-side, which represented only three authorities. Considering the range of those committees the total of 25 was not, on the whole, unsatisfactory. Only one of those Committees was empowered to prepare a town plan for the district, and that was the smallest—the Tees-side Committee; the other committees were advisory. What was required at the outset was some common ground where representatives of the various local authorities could meet and have an opportunity of understanding their different requirements, where they could have opportunities of conciliating their differences, where there would be provided a point around which the regional outlook might crystallise, and where the members would gradually learn to think of their problem not in terms of their own areas, whether those areas were wide or narrow, but in terms of the whole of the district covered by the Committee. In conclusion, he said he quite appreciated the importance of amenities, and in fact a good deal more attention should be given to amenities on sound lines. But he would urge that before attention was given to those secondary problems of amenities the fundamental essentials should be set right. It would be found that the proper unit would never be less than a whole region, and that would therefore be the economic unit. Also, proper provision should be made to secure the best opportunities for production and transport, for the means of livelihood upon which inevitably depended the comfort and fulness of the life of the local unit.

Architecture and Town Planning.

On April 4 MR. G. TOPHAM FORREST, Architect to the London County Council, delivered an address on "Architectural Interests involved in the Making of Town-Planning Schemes." Mr. Andrew T. Taylor presided. In the course of his address he said it was not possible to hold a position such as his without becoming very concerned as to the principles to be adopted in the development of towns, if they were to fulfil their purpose in ways that were both practically and æsthetically suitable—for the day was obviously passing when they were to regard the development of towns and cities merely from the utilitarian standpoint. Were it not for the dominance of industrialism and commercialism to so large an extent following the mid-Victorian era—with the consequent practical setting-aside of consideration for the amenities—they would not now be suffering from the unhealthy and squalid slums that seemed almost inherent to the great towns of their country. The comparatively recent revival—if he might put it so—of the town-planning movement was, therefore, most opportune, and was already exerting a tremendous influence in changing the outlook of not only the responsible leaders of imperial and municipal government, but also the general mass of their population, including that most important person whom they called "the man in the street."

The first point he wished to emphasise was that the principle upon which towns and cities should be planned was that the community to inhabit them, though varying in character as individuals, was interdependent, and constituted one thing that could only be suitably expressed by a unified character in the planning of the city, conveying to all those who used or visited it the idea of convenience, unity, and completeness. That principle had not been recognised in this country in the past. They would all agree that many of the mistakes in the building of their towns resulted from the entirely wrong idea that a city could be built up of a number of unrelated separate units. On the other hand, the principle of unity was indeed a principle recognised to a large extent by both the Greeks and the Romans in the classic age. Their view was that the great religious and civic buildings of their cities should be arranged on a spacious, dignified, geometric principle, within the natural dominating centre of the city's life. One had only to think of the obvious cases of the Acropolis at Athens, the Forum Romanum and its other adjacent Fora at Rome—and, on a smaller scale, the Forum at Pompeii—to realise the recognition of this principle before even the Christian era. It was from this they got the regularised, simple dignity that they associated with so many classic cities. In and around those public centres of the city life were placed great religious temples and civic buildings, and towards such centres converged the main arteries of communication from the outer and more domestic quarters. The same general idea was, moreover, recognised in mediæval times, for they were even more familiar with the "Grande Place" in French and Belgian towns, in or near which the cathedral, town and market halls, and other important buildings were grouped in a spacious area that formed the natural place of assembly of the population. They also realised equally the parallel of the great "Piazzi" of Italian towns and cities, of which that of St. Mark of Venice and the Piazza del Campo of Siena were notable instances. It was natural, too, that with a revival of interest in classical art and literature in the time of the Renaissance its effect would be displayed in the grandiose lay-out of open spaces, in axial planning, and in not only the provision of great and noble buildings, but what was at least of equal importance, the formation of approaches and open spaces that would enable them to be seen and their merits appreciated in the most effective way. That, indeed, was the essence of architecture in relation to town planning. The formation of the great Corso at Rome, terminating in the Piazza del Popolo, and Bernini's colonnaded approach to St. Peter's, were two instances of the ways in which such ideas found expression. The laying out of the French city of Nancy was yet another example, while one remembered also Versailles, Renaissance Paris, and Baron Haussmann's more modern development of it.

He might mention, the lecturer continued, that this was the principle he had in view when it fell to his lot to design the lay-out of the London County Council Housing Estate at Becontree. The site covered an area of about three thousand acres, which was greater than that of Brighton. Wherever possible existing roads, farm houses and cottages had been retained and incorporated in the general scheme. Advantage was taken of a park (known as Parsloes Park) in the centre to form a central park for the estate. Arterial roads varying in width from 60 ft. to 120 ft. had been planned, some of which formed part of the Ministry of Transport's Road Scheme for the eastern area, and others for connecting up with Chadwell Heath Station on the Great Eastern Railway and with a new jetty on the river. A civic centre was planned in the centre of the estate, and was designed to form an important architectural feature to accommodate administrative and public buildings necessary for a township of the size contemplated. The radiation from it of three main roads, together with the importance of the buildings to be erected, imparted to the centre a duly impressive and dignified character.

Another estate, much smaller in area than the Becontree estate, which he had to design for the London County Council, was at Bellingham. The site was triangular in shape, and afforded an interesting example of how a peculiarly shaped piece of land might be dealt with on the principle to which he had already referred. A civic centre had been provided from which roads radiated to the main traffic roads running along each side of the estate.

His next point—and it was an obvious one—was that to plan towns in the most architecturally effective way it was necessary to take into account their characteristic natural features—to make use of hills or risings in the ground for the placing of important buildings so that their elevated position might enhance their effect, as, for example, with the Palais de Justice of Brussels, which dominated in a most remarkable way the whole of the city. If a river flowed through the town, that also should influence to a large extent its main traffic lines and the placing of its bridges, buildings and monuments, so as to be most effective. It would, however, be realised that there was little chance of doing anything of this kind on a great scale in an area already built up, such as London, but even in London careful attention should be given to this matter in the development of new housing estates within the county. At any rate, this principle had been adhered to in designing the London County Council estate at Roehampton. In framing the lay-out of that estate special regard had been paid to the preservation of the amenities of the neighbourhood; and natural features, including the finer trees, had been retained and absorbed into the scheme as far as possible. The estate was approached from Upper Richmond-road through a belt of trees, and there was a row of fine trees on the land immediately east of the estate.

The lecturer, in conclusion, dealt with the built-up areas of existing towns and cities. They obviously could not bring existing towns—so many of which had been developed in a purely haphazard way—within the strict limits of their generally Utopian scheme of things; but with all of them it was doubtless possible to create improvements that would, in the course of time, bring them at least a stage nearer the ideal.

At one time in the Tabard-street area, situated in Southwark, they had a labyrinth of mean streets, covering fourteen acres in extent and containing about 650 houses. The mean streets had now been swept away, new roads constructed, healthy re-housing provided, and, perhaps best of all, an open space of five acres created in a district which was altogether inadequately served in this respect. In ways such as this the London County Council was constantly seeking to carry out alterations which should improve London. It would be comparatively easy, he thought, to draw up a plan for the improvement of the whole of London on the bases of the accepted principles of town planning. It would be, perhaps, a good thing to have such a plan, but the actual carrying out of the plan could only be accomplished in the course of many generations, perhaps centuries. Possibly such a plan would enable the man in the street—the man who really counted, after all—to see what London might be, and, in this way, induce him to assist in its becoming so. It would be a wonderful London, but it would have to be the same London. He, personally, would be very much opposed to any changes which would rob London of its own peculiar charm, and that "something" which made it so different from every other city they knew. The town planner was not a destroyer where old cities were concerned. He took the city as it was, and he changed it, but the change was not a change of character. Nothing was lost. The old glory remained, but it was an enhanced glory, making its citizens proud of their inheritance, and prouder still that they had had some part in securing that the city which they should leave behind should be indeed "a joy for ever."

MR. ANDREW TAYLOR said he considered architectural treatment was the soul of town planning. Without imagination and artistic sense it would become a mechanical matter. There were two methods: one the sheep-track, and the other the formal. Most towns in England were founded on the sheep-track principle: in Chichester and Edinburgh they had examples of careful town planning. London, however, was planned in patches. There were charming little bits, such as Bloomsbury; but as a whole London had been allowed to grow up without planning. He would like to see the vista, well known on the Continent, in English town planning. The Arc de Triomphe and the Opera House, Paris, were fine examples of the successful vista; but in England it seemed studiously avoided—perhaps it was due to sheer indifference.

MR. BARCLAY NIVEN said it was most desirable that round London they should have open spaces. Not necessarily parks; they might have farms, and open breathing spaces for the people that could not be built upon. A good deal could be done to ease traffic by considering things on the outskirts. He suggested taking the hospitals out into the open, clear spaces: many buildings might be placed out beyond the centre. A river was a great asset to a town, but in London full use had not been made of the possibilities of the Thames.

EXHIBITION NOTES

THE WALKER GALLERIES.

THE charm of water-colour drawings is sadly missed by many who devote a great deal of time to their production, and we imagine that many who essay this beautiful art would come to much better results in oil or some other medium. The purity, the delicacy, and the transparency which please us so in the best work are so conspicuously absent in a large number of the drawings annually produced that it is difficult to see why so much work of this kind is done, unless it be through sheer ignorance of what is desirable or the way to obtain it. Something of the fine qualities of water-colour art is apparent in nearly all the work of Margaret Bernard, especially nice being Nos. 5, 6, 21 and 23. In 21, "Oreston Quay, Plymouth," we find a simple directness of expression which is very pleasant and attractive, and the quiet reticence in "The Grey Morning, Littlehampton River" (29) betrays no over-conscious effort such as spoils so many drawings. The bold handling of Lillah Fellowes' ninety-one drawings of Italy is justified by results, for this artist has a good sense of colour and a feeling for form and texture which is not allowed to destroy transparency or atmosphere. This is an interesting collection of drawings which vividly reflects local character and detail. Amongst the most attractive drawings are Nos. 2, 14, 36, 40 and 65. If all the drawings by Major Wilkinson had the reserve and unity of effect of "The River at Chelsea" (97) the exhibition of his work would rank much higher. He has produced a good effect of "The Admiralty Arch" (81), and an excellent sketch in black and white of "Ancient Houses, Dinan" (25). His widely extended efforts are generally overwrought and doubtful in colour and drawing.

THE ST. GEORGE'S GALLERY.

When we come to the work of the modern English Water Colour Society at the St. George's Gallery, we can hardly believe the pictures will persuade the public to credit the world with such aspects of colour or drawing. There is certainly one drawing with tone and colour value, "Flask, Walk, Rain," by Charles Ginner. There are several black and white drawings in the gallery, but even these make no adequate atonement for their fellow exhibits.

Collapse of a Crane.

A 60 ft. electric crane used in the rebuilding of part of the Café Royal collapsed recently in Regent-street. Apparently it was either the parting of a steel guy-rope or movement of the bed of the crane, which was on scaffolding 90 ft. high, which caused the accident. The crane was being used in unloading rolled steel bars, and fell across the girders below and on the roof of the rear portion of Oddenino's Restaurant in Regent-street.

Visit to Kensington Palace.

By the permission of H.M. Office of Works a visit to Kensington Palace has been arranged by the Art Standing Committee, to take place on Saturday afternoon, April 26. Members and Licentiates who wish to attend should apply to the Secretary R.I.B.A. as soon as possible.

The Annual Dinner, 1924.

The annual dinner of 1924 is to be held on May 6, at 6.30 for 7 p.m., at the Trocadero Restaurant, Piccadilly, W.1.

Cricket Match.

The Architectural Association Cricket Club have challenged the R.I.B.A. to a cricket match, to be played on the A.A. ground at Boreham Wood, on Saturday, July 12. Mr. M. H. C. Doll has consented to raise the team to represent the R.I.B.A., and would be glad to hear from any playing members who would be willing to take part. Address: 5, Southampton-street, Bloomsbury, W.C.1.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

PRIZES AND STUDENTSHIPS, 1924–1925.

The following prizes will be awarded in January, 1925:—

The Royal Institute Silver Medal and £50, for Essays.

The Royal Institute Silver Medal and £50, for Measured Drawings.

The Tite Prize: a Certificate and £100, for travel and study in Italy. A Design for a Small Museum is the subject set for the year.

The Pugin Travelling Studentship: a Silver Medal and £75, for travel in Great Britain and Ireland, and study of Mediæval Buildings.

The Godwin Bursary and Wimperis Bequest: a Silver Medal and £130, for travel outside Great Britain and Ireland, and study of modern architecture abroad.

The Owen Jones Travelling Studentship: a Certificate and £100, for the study of ornament and colour decoration.

The R.I.B.A. (Henry Jarvis) Travelling Studentship: £250, at the British School at Rome.

The R.I.B.A. (Alfred Possom) Travelling Studentship: a Gold Medal and £250 and Silver Medals, for the study of Commercial Architecture in America.

The Grissell Gold Medal and £50, for Design and Construction. The subject of a Dance Hall has been set for the year.

The Arthur Cates Prize: £50.

The R.I.B.A. (Archibald Dawnay) Scholarships.

The Ashpitel Prize: £10 (in books).

The R.I.B.A. Silver Medal for Recognised Schools.

Sending-in date 4 p.m., November 28, 1924 (except where otherwise mentioned).

The R.I.B.A. prizes pamphlet containing full information on the various prizes and studentships and the detailed programmes for the competitions may be obtained (price 1s.) at the R.I.B.A., 9, Conduit-street, W.1.

The prizes this year total in value nearly £2,000. Since last year the following alterations have been made:—

Candidates who have entered for the Soane Medallion or the Tite Prize are permitted to submit their drawings in place of the usual problems in design required for the final examination.

Candidates who have been awarded the Soane Medallion or the Tite Prize or who have received a certificate of Hon. Mention in either of these competitions receive exemption from the design portion of the final examination.

The age limits have been extended by five years in the case of those prizes for which an age limit is stated.

The values of the Essay Prize and the Arthur Cates Prize have been increased to £50 per annum each.

ARCHITECTS' AND BUILDERS' INQUIRY BUREAU

*** We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.*

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or better still, in typescript?—ED.

[REPLY *re* LIBRARIES AND INHABITED HOUSE DUTY.]

SIR,—Three points are raised by this question: (1) Is a library chargeable to the inhabited house duty? (2) Would a caretaker's quarters, directly connected to the library, and communicating therewith, make the whole building chargeable? (3) Would cutting off the caretaker's quarters from the library, with separate access to the outside, make the caretaker's quarters alone liable to the duty?

As regards (1), in Styles *v.* Middle Temple (1899), 68 L.J. Q.B. 1046, it was held that the hall of the Middle Temple is liable to the duty; and that the library, being essentially different from a "hall or office," is not; on the grounds that a "hall or office" is generally used for some business purposes connected with the general objects of the society, company, or corporation which possesses it, whereas a library is a place devoted to books, reading, and study. Both the hall and the library are used in the daytime only; and there is no sleeping accommodation in either case.

In Clifton College *v.* Tompson (1896), 1 Q.B. 432, and Charterhouse School *v.* Gayler (1896), 1 Q.B. 437, it was held that a gymnasium, library, chapel and swimming bath used in connection with a school were not chargeable in conjunction with the master's house.

In Edinburgh Life Assurance Company (1875), 1 Tax Cases 5, it was held that the intention was to assess all houses which were occupied, not merely by persons residing therein, but also by persons occupying them during the day for business purposes, and that all museums, colleges, halls, libraries, clubs, etc., would be included.

In Corp. of Glasgow *v.* Inland Revenue (1880), 18 Sc. L.R. 1, it was held that a museum intended to be exhibited to the public, with free admission thereto, was an inhabited house and chargeable.

As regards (2), in the London Library *v.* Carter (1890), 38 W.R. 478, 2 Tax Cases 594, there were a library and a reading room used by members, and not conducted for profit. The use of a sitting-room and bedroom were given, in addition to wages, to an attendant who, with his wife, dwelt there both by day and at night, for the protection of the premises. It was held that the library was not exempt.

As regards (3), in Foster *v.* Athenæum Newsroom and Library (1907), 97 L.T. 692, there was a library and a newsroom owned by the whole body of members, and not conducted for profit, but maintained by the members' subscriptions. At one end of the building there was a librarian's quarters, and the librarian had access therefrom, through doors and a passage to the library. No one slept in the library. It was held that the proprietors were liable for the duty on the whole of the premises, as they constituted one assessment.

There is no recognised definition of the term "dwelling house."

Trade and business houses, or tenements, being distinct properties, solely used for any trade or business, or any profession or calling by which the occupiers seek a livelihood or profit, are exempt. See Nichols *v.* Malim (1906), 1 K.B. 272. The exemption is not lost by allowing a menial or domestic, or similar person employed by the occupier, to dwell in the house, solely for its protection.

From the above it would therefore appear:—

1. Any library open to the public is assessable, and a caretaker's quarters, in the same block, with or without separate access thereto, would be assessed as part of it, making one subject. Where the library and quarters were entirely separated, there would be two subjects.

2. A library not open to the public, but used by its owners for the reading of books only, and not run for profit, would not be assessable.

3. If, however, such a private library had attached to it quarters for a librarian or sub-librarian, part of whose salary was the said quarters, then the private library would be considered as part of his dwelling house, and the whole building assessed.

4. But in the London Library *v.* Carter above, it seems suggested that if the person inhabiting such quarters was a caretaker pure and simple, that is, in no sense having charge or part charge of books, then the library portion of the block would be exempt.

The cases would appear to show a parallel to the distinction made when a professional man's whole house (*i.e.*, including, *e.g.*, a surgery, consulting rooms, etc.) is assessable as one subject; but the tradesman or shopkeeper can claim exemption for that part of his premises (factory, warehouse, shop, etc.) which are used exclusively for business, even if they communicate.

READER.

[REPLY TO "DESIGNER."]

SIR,—I think there is little doubt that a caretaker's flat, even though directly connected with a library, would be treated as a separate unit for this purpose much as each flat in a block of flats, though all connected by a common staircase, would be treated as separate. The intention of the law is quite clear and would surely be administered in this spirit.

A. B.

Theatres.

SIR,—I should be obliged if you could furnish me with the following information:—

The position, in relation to the main stage of a theatre, of an apron stage, with two extra proscenium openings. I should also like to be informed of the position of the two extra proscenium openings in relation to the apron stage.

"PERPLEXED."

Miserere or Misericord.

SIR,—Can you inform me which of the following terms is the more correct, "Miserere" or "Misericord." The former is used in Parker's "Glossary of Architecture," and the latter by modern writers.

The latter term has been used to designate the "flesh-eating halls" of the later monasteries.

R. A. B.

Zinc Roofs.

SIR,—I have found that the life of zinc can be extended by an occasional coat of "Siderosthen" solution, which is a form of bitumenised paint, applied after the metal has become rough by a year or more exposure so that the paint may get a grip. Rusted iron also for the same reason is better, provided the rust dust is brushed off thoroughly before painting. For many years I have invariably used "Sideros" for the inside of eaves guttering.

MAURICE B. ADAMS.

Portraits of Inigo Jones.

SIR,—Having before me a portrait, on vellum, in Chinese wash, oval, 4 in. by 4½ in., of this architect, by himself, I send you a line that it may be added to your list. Two drawings by him done in his student days in Italy (small folio) are also of interest.

P. A. ROBSON.

[REPLY TO "SUBSIDY."]

SIR,—The reading of the regulations of the Ministry of Health seems quite clear upon the point rased by your correspondent. I certainly understand by them that building over a porch would bring such porch within the containing walls of a house. The Act is for the purpose of producing a certain type of small house, and is worded with the express intention of preventing a larger type being admitted by any tricks.

"FAIR PLAY."

WATERLOO BRIDGE

A FURTHER report, brought forward by the Improvements Committee, which came before the L.C.C. recently, when the Council took up the consideration of the proposed scheme to widen the bridge at an estimated cost of £1,000,000, states: There is a condition of unstable equilibrium, and it has to be borne in mind that such a condition often tends rapidly to become worse.

The report shows old drawings from which it can be seen that the foundation of each pier and of the abutments consists of timber piles about 20 ft. long, driven in rows. Each row is capped by a whole timber sill or sill piece, across which further whole timber sills are laid, forming a gridwork of timber about 2 ft. deep above the piles, the interstices being packed with stone. The gridwork is covered by a decking of timber about 6 in. thick, upon which the masonry of the piers rests and was built. The bed of the river in and towards the centre is composed of gravel, but underlying the gravel is the London clay, which extends downwards for a great depth. The thickness of the gravel bed is relatively small. Under the masonry of the third and fourth piers from the Lambeth side the gravel is only about 9 ft. to 10 ft., consequently piles of the length shown in Rennie's drawings would pass right through the gravel and be standing in the London clay. It would appear from the original drawings that when the bridge was constructed the tops of the timber platforms were everywhere below the bed of the river. Such is not the case now, however, as in many cases the bed of the river between two platforms has been so eroded or scoured out that it is lower than the top of the platforms—that is to say, it is below the bottom of the masonry of the piers. The erosion or scouring is of long standing, and in 1882-84 the Metropolitan Board of Works expended about £62,000 in laying concrete slabs around the timber platforms with the object of protecting them from erosion or scour. Settlement has occurred practically throughout the bridge, but is far more pronounced at the fourth pier from the Lambeth side than elsewhere. There is, in fact, a condition of unstable equilibrium, and it has to be borne in mind that such a condition often tends rapidly to become worse.

The report adds: Remedial measures are being taken in the hope that the settlement may be arrested, but that it is too early yet to say whether these will be successful. These measures are not being tried with the hope that they may prove a permanent solution of the problem. They are only temporary remedial measures, having for their object the maintenance of the uninterrupted use of the surface of the bridge for road traffic, or the waterways of the bridge for river traffic until a temporary bridge can be provided.

Mr. Barclay Niven, at the recent Town Planning Conference at University College, suggested that if Waterloo Bridge had to be rebuilt, the London County Council, instead of going to the expense of a temporary structure, should secure possession of the Charing Cross Railway Bridge, and use it for vehicular and pedestrian traffic; the payment to the railway company to be reckoned as part of the compensation they would receive for taking their station over the river.

At a meeting of the Council on Tuesday it was decided to proceed with the widening scheme.

THE BUILDING TRADES EXHIBITION

[The Building Trades Exhibition at Olympia is to be opened to-day by the Minister of Health at twelve noon, Mr. J. A. Gotch, P.R.I.B.A., in the chair. The Exhibition closes on April 26. A plan of the Exhibition and a complete list of exhibitors were given in our last issue.]

BUILDING, 1914-24

By T. P. BENNETT, F.R.I.B.A., Hon.F.I.O.B.

Such an event as the Building Trades Exhibition affords an opportunity for taking stock of the position of building. Has it advanced or is it falling upon bad days? Is there vitality or stagnation, sound or execrable design, progress or retrogression? These are fascinating queries and range themselves under a number of heads.

1. The development of design.
2. The kind of buildings which are in course of erection.
3. The materials which are in use.
4. The development of labour-saving equipment.
5. The development of decorative materials.
6. The development of machinery and mechanical appliances.

Development of design is placed first, because if design is dead there can hardly be life in building. An examination of *The Builder* for 1914 and for 1924 proclaims at once that architecture is more full of the breath of life than it has been for many years. With the increasing fire and enthusiasm in the profession has come an ever-increasing standard of architectural journalism and of methods of reproduction. It may safely be said that never before has architecture been so well served in this respect.

In 1914 the Schools of Architecture were just making themselves felt. The first Atelier was working at top pressure under the able guidance of Mr. Arthur Davis and the brilliance of Mr. Chaures. The R.A., Glasgow, Manchester, Liverpool, and other schools were housing groups of enthusiastic students whose work was attracting much notice and attention. This work had still to make its mark upon the actual buildings in course of erection. Many of the buildings illustrated were dull, and others were but slowly throwing off the stiffness and incomplete development of the latter years of the nineteenth century. Here and there a scheme of more than ordinary interest showed that there was life below the surface and that its vitality would soon dominate the architectural world.

The house appeared only in its larger forms. The housing problem as such hardly existed. If it existed, the public were hardly conscious of its existence. Architects rarely turned their attention to the small problems involved, and if they did their efforts were rarely illustrated. Development was taking place in 1914, but it was the slow development of orderly evolution. The machine was moving, but moving ponderously. A few adventurous spirits like E. A. Rickards and Robert Atkinson were appearing as the head of a column of keen students seeking below the surface, straining every nerve to show their capabilities to free architecture from its lethargic state, breathing vitality and energy, and showing by their works that they were going to accomplish something of note in the not far-distant future.

There can be no doubt in the mind of the calm observer that 1924 is far more intense than 1914. That progress has been made and is being made. That the field of architecture has widened considerably and that the general level of architecture is higher. Architectural design seems to have become broader in treatment, more logical, more full of personality, and therefore much more interesting. There is evidence in the press that architects are studying more; they are anxious for more definite and more extensive information; and so is seen a wide range of articles on Italian, French, English and American work, both contemporary and otherwise.

Two kinds of buildings stand out prominently in 1924. One is the group of buildings relating to housing and the other the group relating to commercial buildings. In 1924 the housing problem has returned, but with its return has come a desire on the part of the public to have not merely more houses, but to have better houses and to have each house possess a modicum of personality even though it be small. Whether, therefore, it is through the medium of the men in private practice, through the official architect, or through that unfortunate transitional official, the architectural assistant to the Borough Engineer, there can be no doubt that architectural design has become part of the small house in a way that was unknown in 1914. But the design of the house is only one of its amenities. The planning of the small house has been studied to an extent and with a purpose only faintly echoed in 1914 by Letchworth, Hampstead Garden Suburb, Ealing, Bournville, and Port Sunlight. The house has come to occupy a position in the forefront of architecture, and is no longer its ugly sister. None can doubt that this movement is yet in its youth, for if 1900 saw the birth of the architectural cottage, 1924 sees still only its adolescence.

Side by side with the house has come the architectural development of business premises. In 1914 the Selfridge building in London stood almost alone as an attempt at a serious modern architectural shop. In the city some banks and a few insurance offices were attempting to indicate the fact that architecture need not be the monopoly of the public building, the Government office, the mansion and the country house. In 1924 all progressive business men are realising the importance of distinctive architecture and its value to business. It is even possible to feel that many commercial men are beginning to admire fine buildings for their own sake, and to imagine that the day will come when bad design will carry its own condemnation. This ideal is at the moment but a child of the imagination of the architect, for commercial architecture, like housing, is still in its youth.

The materials of building have suffered a severe and critical examination during the period under review, and it is even yet difficult to determine the precise result of this wholesale questioning of precepts and materials of age-long acceptance. The war created the need for the exploitation at one and the same time of any and every means of erecting structures. Tests were forced upon builders they would never have dared to attempt under normal conditions. Wood, asbestos and terra-cotta vied with brick and concrete for speed of erection, cheapness and solidity; and in 1924 it is time to take stock of these experiments and to try to deduce from them some results of permanent benefit and value.

The plethora of concrete block-making machines which once flooded the market has gone, but there still remain some of the better types. In some cases, no doubt, unsuitable aggregate has been used, and this has brought discredit on the concrete. Brick, however, is generally preferred as a building material for small houses. There are some processes that somehow or other have stood the test of time, and are still in active use. There can be no doubt that sooner or later a system of concrete construction will be evolved that will be cheap and at least as efficient as brick, and will reduce the somewhat unpleasant and tedious task of assembling small units. In this direction further development in concrete building must be anticipated, the present position being a *hiatus* between the unlimited experiment of the years 1918-21 and a future sound, reliable and economic method of building small houses in good concrete.

In conjunction with various flooring compounds designed to take the place of boards, marble and similar substances, there can be no doubt that a great future lies before the artificial building material in its many forms. All exhibits of this class should therefore be examined, because, while perfection has yet to be reached, there will come a day when the artificial material will be employed upon a very extensive scale and will have great advantages over natural materials as regards cost, reliability, speed of erection, and ease of handling. Whether these materials will ever succeed in giving texture and beauty equal to the products of nature remains to be seen.

The next great group of developments that require study are those relating to labour-saving equipment. Labour is dear, and is likely to remain so. All men want either a life full of interest or the shortest possible hours of labour. All monotonous or tedious tasks must therefore be performed with the minimum of effort, at the lowest cost and without extensive initial outlay. These labour-saving appliances range from woodworking, brick and stone-cutting and other machinery to vacuum cleaners, electric and gas equipment of various sorts, and incidental items like automatic delivery doors and piano-players. In 1914 this great group of important matters was at the beginning of its development, and, with the exception of woodworking and other machinery, almost unknown. To-day many of the items mentioned have come to stay, and there can be no doubt that many other branches of this fascinating subject will receive attention in the near future. The architect, the builder, and the householder should all be familiar with development as far as it has gone at present.

This decade has, however, also seen progress in the standard of the artistic taste of the public and of the demands of the architect for more artistic materials. Many decorative products have, therefore, received attention. The enamels are finer, the colour range is greater, the choice of materials available is infinitely wider than it was at even so recent a date as 1914. This artistic development is still taking place, and the great group of decorative firms must therefore be carefully examined to see the latest things that are waiting for the designer to use, and to suggest new directions in which his skill may be developed and his brain evolve attractive finishings for his buildings. This group of materials is not confined to surfacing: there are vitreous tiles, fresh treatments for wood panelling, new biscuit-ware for curbs and hearths, new kinds of metal and enamel, and a vast range of fittings for electric and other lighting which must be seen and remembered.

For the purely practical man has come the mechanical handling of material. Concrete mixers and depositors, hoisting apparatus, road and concrete breakers, petrol engines, mast cranes, and many other products which are the result of efforts to solve the labour problem of to-day and to minister to the constant demand for speed of erection and economy.

As a summary it may be said that the decade 1914-24 has shown progress in artificial materials of all kinds, labour-saving equipment, decorative materials, and in the machines for the mechanical handling of building materials. These are at the moment the points of greater progress, and it is to these groups that inquiry and interest will be directed.

TEN YEARS OF CONSTRUCTION

By EWART S. ANDREWS, B.Sc., A.M.Inst.C.E., M.I.Struct.E.

ALTHOUGH the war years absorbed half the last decade considerable progress has been made in construction. While it is true that during the war ordinary building work was at a standstill, there was great activity in the building of factories, aircraft buildings, and military buildings of all kinds; and the shortage of materials and labour, combined with the urgent necessity of rapid construction, gave several of the newer forms of construction a more extended trial than they would probably have received in this country if things had continued in the even tenour of their way during this period.

At the end of the war optimistic politicians, surely against the better judgment of their better informed, if less scintillating, technical advisers, promised ideal homes for all and embarked upon a housing programme in which many experiments were conducted and many mistakes were made. When, therefore, there occurred the inevitable bump which pulled the scheme up short, the building industry received a set-back from which it is recovering but slowly. It is now convalescent, but is rather afraid of a relapse.

All kinds of construction were tried during the housing big push; some were ill-digested schemes which ought never to have been started, and others were promising ones which went wrong because their parents tried to make them run before they had mastered the stage of walking. Many valuable experiments were, however, made and some modifications were introduced which will gradually gain recognition as definite improvements in construction.

With regard to the experiments made, largely under the guidance of Government departments, we hope that someone with a flair for digesting data will prepare a review which will put the results in easily digestible form before the building community; it is given to but few to extract much nourishment from Government reports—somehow their very appearance takes away the appetite. But much information of very great value to the building industry has been published in official reports, and yet comparatively few people seem to have studied these reports in sufficient detail to apply the results to practical design.

The building fraternity are a thoughtful people, but they do not like print; practical men in the building industry usually do not believe that the statements in books are true. Their craft was in a flourishing state while Caxton was learning his letters, and they never learnt their trade from books, so how can books be much good? Perhaps some day the scientific bodies and Government departments will have their reports popularised by publicity men.

The principal developments in construction during the past ten years have been in steel frame and reinforced concrete construction, and it may serve a useful purpose if we divide our review into these heads.

Steel Frame Construction.—By a steel frame building we mean one in which the whole of the loads on the building are carried by a steel framework; the walls cease to provide any stability to the building and merely serve to keep the weather out in the case of external walls and to divide the building up into suitable rooms in the case of internal walls.

Steel frame buildings were made permissible in London by the 1909 London County Council General Powers Act (commonly referred to as the Steel Frame Act); the authorities responsible for this Act were naturally somewhat nervous, with the result that the provisions of the Act are in many respects unduly stringent and result in unnecessary increase in cost—thus taking away much of the advantage of the method of construction which the Act was apparently intended to encourage. In the drafting of the Act the authorities made the blunder of specifying the working stresses and other details of construction. The result is that although experience and further knowledge has, we believe, definitely proved that the clauses are too severe, nobody can relax them until a fresh Act of Parliament has been passed—and Acts of Parliament have a knack of taking a long time. If the Act had left the details of construction to be embodied in Rules made under the Act—as it did for reinforced concrete because, fortunately, the time was not quite ripe to specify the details of design and construction—the detail provisions could have been relatively easily altered when experience had shown amendment to be desirable.

The result of the provisions of the Steel Frame Act is that it is often cheaper to erect a building designed with the thickness of walls specified under the old Acts for an ordinary brick building, all the internal portion of the building being designed upon a steel frame, than to erect a building designed as a steel frame building under the Act. This anomalous fact is one that requires careful explanation to avoid misunderstanding and ought clearly to be understood by all architects, because when once the building industry realises this fully we are convinced that sufficient agitation will arise to force the authorities to take steps to alter the law. We, therefore, think that some useful purpose may be served if we explain at some length how this situation has arisen.

In the first place, we should explain that under the Steel Frame Act the District Surveyors are called upon to see that the provisions of the Act are fully complied with, and full calculations showing the strength of every beam and column (called pillar in the Act) in the frame have to be filed with the Surveyor. At this stage we might point out that it is quite foolish to grumble at the District Surveyor for his requirements that the provisions of the Act shall be complied with; the District Surveyor is a public official who has a difficult task to perform, and who nearly always performs it with remarkable tact and patience, and he has not the authority to alter the Act—he must insist upon its observance. The District Surveyors are not responsible collectively or individually for the provisions of the Act—they are only there to see that they are carried out. It is reported that in the saloons of the Wild West, before the drought, a notice was sometimes put up which read "Please do not shoot at the pianist—he is doing his best"; something of the kind might be put up in the District Surveyor's offices.

The anomaly to which we refer arises from the fact that the floor loads specified in the Steel Frame Act are in most cases unduly high and the working stresses allowed are unduly low in many cases—particularly in the case of columns or stanchions. Then, again, the Act provides that for fire protection purposes the steelwork must be encased in fire-resisting casing, which is usually of concrete; this concrete casing undoubtedly adds to the strength of the steelwork, but no such addition of strength is permitted in the calculations, and as the weight of the casing must be taken into account in the loads its effect is to require still more steel to carry it.

In order to make clear that we are reasonable in our contention as to the low stresses allowed for steel pillars we take the case of a single-story stanchion 12 ft. long, required to carry 70 tons. Under the L.C.C. regulations the District Surveyor would regard this stanchion as equivalent to one having one end hinged and one end fixed and we should have to use a 10 by 8 by 70 section, the permissible load on which, by the L.C.C. Act, is 73.7 tons. If we look up the handbook of a well-known firm we shall find that this stanchion is listed as safe for 123 tons; now the figures given in this firm's handbook are derived on the formula given by Mr. J. Mitchell Moncrieff, M.I.C.E., in a paper which showed a very scientific and exhaustive investigation into the whole subject, including the analysis of thousands of test results, and we have never seen any serious challenge as to the safety of Mr. Moncrieff's figures. As far as we are aware the Borough Engineers all over the country will accept these figures, so that we arrive at the ridiculous result that a stanchion which is only safe for 73.7 tons in London is safe for 123 tons anywhere else.

In advocating amendment in this respect the writer is not advocating a reduction on the real factor of safety of the building, nor does he approve of any attempt to reduce the attention given to the design of the details of joints and connections; he only wishes to avoid the waste of steel which arises from buildings designed under this Act and to make possible the efficient economical design of steel frame buildings. In short, he wishes to see the regulations so drafted that it may, in fact, be possible to employ the steel frame method of construction as a more economical method than that of building with thick brick walls; there is not the slightest doubt that steel frame buildings are more economical than brick buildings for the same strength.

The "Power of Waiver."—There is a tendency to overcome the objections which some engineers have to the Steel Frame Act by extending the "power of waiver" which the London County Council already has under the Act in respect of certain of its clauses. Under this procedure application has to be made to the London County Council for permission to waive or modify these clauses, and the intention appears to be to extend this power to the whole Act. To this course the writer sees very strong objections; in the first place, there is the objection from the engineer's standpoint of having two different sets of officials to deal with. This leads to a division of responsibility which leads to friction between the officials and to great delay in the prosecution of the work. The practice also leads to administration by precedents and leaves it very uncertain as to what may be permitted and what may not.

We object most strongly to having to go to the expense and trouble of applying to the London County Council for permission to do something that arises in everyday practice and that everybody should always be allowed to do. It is like making a law that everyone must wear pink trousers, but that they may apply to the Council if they wish to wear trousers of any other colour. In making this objection to the extension of the power of waiver we hope no reader will infer that we have any complaint to make against the officers of the Council who deal with these matters; we have invariably found them courteous and reasonable.

The Advantages of Steel Frame Construction.—These questions of Building Acts and Regulations are not very interesting; they are, on the contrary, extremely dull, but unfortunately they are very important, and in spite of their dulness we think that all architects and engineers should study them sufficiently to be able to fight against them; this idea of every different town having its own pet regulations is becoming a disease.

We will pass, therefore, to the consideration of the advantages of steel frame construction. The first advantage is speed of erection; not only have we increased speed of erection of the whole building, but the frame may be run up quickly and thus the building can be roofed in at an early stage, thus keeping out the weather and enabling the work to proceed with much greater comfort for the men. The next advantage is saving in cost—although, as we have previously pointed out, the existing L.C.C. Steel Frame Act does not enable this to be fully realised. Another advantage arises from the fact that since with a steel frame building we do not rely upon cross walls for the stability of our building, the planning of the interior portion may proceed upon more elastic lines than are possible with an ordinary brick building.

While speaking of the question of planning we would like to point out to the architect the great advantages arising from consultation with the structural engineer at an earlier stage in the development of the plans than is now usual. One of the great troubles with which the engineer has to deal is that of oft-recurring alterations and modifications, many of which

arise from insufficient time being given to the engineer in which to design the steel frame in detail and to discuss modifications in planning made desirable from considerations of the steelwork. The architect, of course, has his own difficulties in getting his client to come to a decision, but it would help matters if everybody realised the increased trouble and expense involved in leaving the complete design of the steelwork to a period only just before the plans and specifications are ready to go out for tender.

Reinforced Concrete Construction.—Reinforced concrete has made great strides during the past ten years; the method of construction has now been in use for sufficient time to satisfy an apprehensive public as to its lasting qualities, and further experience both in the technicalities of the design and in the practical details of the construction has enabled us to feel more confident than ever of the great value of reinforced concrete as a constructive material.

One of the difficulties under which concrete construction laboured for many years was that architects did not take very kindly to it, with the results that the works carried out were mostly done without the co-operation of an architect and so lacked that character and proportion which characterises the work of a good architect. The buildings looked ugly, therefore, and people at once said that concrete was a hideous material, forgetting how dreadful brick buildings can be made to look when designed, if designed at all, by someone ignorant of architectural treatment. Gradually, however, we are evolving a style of concrete architecture, and in the humble opinion of the writer—a mere engineer—some of the modern reinforced concrete factories have a very fine appearance. Concrete construction is so elastic that it lends itself remarkably well to architectural treatment—you can do anything with it.

The British Empire Exhibition at Wembley has given concrete construction in this country an opportunity of making good which, it is believed, will have a lasting effect upon its increased adoption as a constructive material. In the Stadium and the Machinery Hall we see the excellent effects to be obtained by the combined efforts of a far-sighted and enterprising architect and a capable and ingenious engineer; we do not know who is responsible for the introduction of the "scrubbing-board" finish for the concrete at Wembley, but it is an inspiration.

Reinforced Concrete Floors and Retaining Walls.—In addition to increased use of reinforced concrete as the material for the whole building, the past ten years have seen tremendous advances in the use of reinforced concrete for floors and retaining walls. In most of the steel frame buildings of the present day some form of reinforced concrete flooring system is employed. Several firms of contractors specialise in floor construction and construct a proprietary form of floor which is usually called a "patent" floor. In general, particularly for factory and warehouse work, we believe that the most economical form of floor is the ordinary reinforced concrete floor employing plain bars; in other cases the hollow-tile form of floor is often practically as cheap and possesses special advantages in buildings in which the floor loads are comparatively low. This form of floor has an advantage in sound insulating properties and usually makes a better job for plastering the ceilings underneath; it is therefore particularly useful in offices and hotels.

Pre-cast floor-units of reinforced concrete also have their advocates; they have the advantage in saving centering and also in enabling the floor to be used almost immediately after laying. In some cases, however, we believe that against these advantages we have to place an increased cost compared with ordinary reinforced concrete.

The increase in site values and the limits to the heights of buildings have made it common in London to have one or two floors below ground level; this usually involves the construction of retaining walls for which reinforced concrete is the constructional material *par excellence*. The design of retaining walls is a subject which has some difficulties owing to the variable behaviour of earth in producing horizontal thrust, particularly in cases in which the adjoining ground is loaded either by buildings or by road traffic. It is therefore a mistake to design retaining walls upon rough rules such as those given in some of the older pocket books, but the absence of failures with reinforced concrete walls designed by engineers who are familiar with the theory of the subject should prove that excellent results can safely be expected from a reinforced concrete retaining wall designed upon modern lines.

L.C.C. Regulations.—The erection of reinforced concrete buildings in London is governed by the regulations issued in 1917 by the London County Council, and as most other municipal authorities in this country adopt the L.C.C. Regulations as a standard, a very large amount of the reinforced concrete work in this country is governed by these regulations. They, like the curate's egg, are excellent in parts; but are generally unwieldy and too conservative in respect to some of the units, particularly the columns or pillars. We have no doubt that before long revised regulations will be issued which will enable the cost of reinforced concrete to be reduced to some extent without lowering the factor of safety of the structure.

Some of the remarks which we made with respect to the Steel Frame Act apply equally to the Reinforced Concrete Regulations; for instance, we think that the specified floor loads should be reduced. While we see grave objection, as previously pointed out, to the policy of overcoming the legitimate objections to the regulations by giving the Council a general power of waiver, to be exercised in respect of any of the regulations, we are strongly in favour of the Council having the right to accept designs for new constructions to which the present regulations obviously do not apply. As an example of this we mention the case of "mushroom" floors, for which there is no provision at present, but which the Council should have the power to allow if they are satisfied that the design is satisfactory.

Advantages of Reinforced Concrete.—Reinforced concrete undoubtedly costs more to design properly and requires much more supervision in construction than structural steelwork, and these facts should be fully recognised at the outset. In spite of these drawbacks, however, reinforced concrete in many cases has been proved to provide the most economical construction. If the design is good and the work is carried out under good supervision, we believe that the resulting strength of the building if tested to destruction would be found to provide a considerably greater factor of safety than is commonly assumed, so that there is a very considerable margin to make up for the shortcomings which might arise from failure to fulfil the best conditions for concrete construction.

As a result of the great improvements which have taken place in the manufacture of Portland cement since reinforced concrete first came into use, the cement manufacturers can now guarantee a strength considerably in excess of the minimum called for in the British Standard specification. Engineers have learnt during the past ten years a good deal more about the strength of concrete than they knew before, and the importance of the amount of water used in mixing is now known to be very great. It is easy by using too much water to reduce the strength of the concrete as much as by omitting one-third of the amount of cement in each sack.

In reinforced concrete design great care has to be taken in the exact detailing of the reinforcement to ensure first-class construction, but reinforced concrete develops such great strength when the concrete itself is made under careful supervision and with meticulous care to follow accurately the specification, that slight errors in the design and placing of the reinforcement may not have serious results in the construction. In saying this we do not wish to minimise the great importance of accuracy in the design and placing of the reinforcement; we mention it to allay the fears of some people who point out that in the actual construction the position of some of the rods may be displaced and who imagine that for this reason reinforced concrete is likely to prove unsafe. There is not the slightest doubt that reinforced concrete when carefully designed and carried out with reasonable skill provides an economical structure with a very great margin of strength.

We believe that the next ten years will see even greater developments in reinforced concrete construction than has taken place in the past ten years. Concrete construction has just survived its growing pains, and can look forward to a long and full life—a new stone age has dawned which will leave a lasting mark upon the civilised life of the future.

MEETINGS AND CONFERENCES AT THE BUILDING EXHIBITION

AMONG the arrangements at the Building Trades Exhibition at Olympia are the following:—

Saturday, April 12.—Visit of Institution of Sanitary Engineers.

Monday, April 14.—Visit of Devon and Exeter Architectural Society and South Wales Institute of Architects.

Tuesday, April 15.—10.30 a.m.: Institute of Clayworkers annual meeting. 11.30 a.m.: Meeting of the National Federation of the Building and Engineering Brick Trade. 11.30 a.m.: Meeting of Employers' National Council for the Clay Industries. 3.0 p.m.: Conference on Brick Paving. 6 p.m.: Lecture, "Old Westminster," St. Stephen's and the Painted Chamber, by Mr. Herbert A. Cox.

Wednesday, April 16.—Visit of Berks, Bucks and Oxon Architectural Society and Royal Sanitary Institute.

Thursday, April 17.—4 p.m.: "At Home" to members of the Royal Institute of British Architects, the Architectural Association, and the Society of Architects.

Saturday, April 19.—Congress and Dinner of Architects' and Surveyors' Assistants' Professional Union.

Monday, April 21.—Congress of A.S.A.P.U. continued. Visit of the Society of Estate Clerks of Works.

Tuesday, April 22.—11 a.m.: International Cement Congress. 1.30 p.m.: Luncheon to Delegates.

Thursday, April 24.—11.30 a.m.: Annual meeting of the South-Eastern Federation of the Building and Engineering Brick Trade. 4 p.m.: Reception by the President and Council of the London Master Builders' Association to the members of the Association and the National Federation of Building Trades Employers. 6 p.m.: Lecture, "Westminster Hall," by Mr. Herbert A. Cox.

Popular Lectures.

The Architects' and Surveyors' Assistants' Professional Union will hold a series of popular lectures in the Lecture Hall, at 6.30 p.m. The syllabus is as follows:—

Saturday, April 12.—"The Houses We Live In," by Mr. Raymond Unwin, F.R.I.B.A., and Mr. Alfred Clifford.

Monday, April 14.—"Plays and Playhouses," by Miss Lena Ashwell.

Wednesday, April 23.—"Motor Users and the Roads," by Lord Montagu of Beaulieu and Mr. H. V. Lanchester, F.R.I.B.A.

Friday, April 25.—"The Modern School and the Future Race," by Mr. G. Topham Forrest, F.R.I.B.A.

Admission will be free.

Charing Cross Improvement.

At their next meeting, the Westminster City Council will consider a recommendation by the Works Committee for the removal of part of the island refuge between the Nelson Column and Whitehall, by the King Charles statue. The removal will become necessary when, shortly, the new building at the corner of the Mall approach and Cockspur-street is completed and the footway is set back 25 ft.

SANITATION AS WE FIND IT

By BERTRAM I. HELLYER.

The principles and the practice of sanitation as it refers to plumbing and drainage have undergone no marked change for many years.

Since the custom of trapping the waste pipes from baths, lavatories and sinks before entering the drainage system, while allowing the soil pipes to connect direct and to act as upcast ventilators, little real change has been seen. The iron age has steadily set in. Iron drains have further supplanted stoneware. Iron soil, waste and rain-water pipes have still further curtailed the use of lead, so that the modern plumber works less than ever in the beautiful malleable metal that christened him.

It is true that during the war there was a sudden demand for leadwork in all varieties of thickness, size and shape—towers, tanks, coils, &c., with attendant lead-burning, but this was all for the special purpose of war plant, and the call no longer exists.

Ornamental lead work has almost ceased to be worked, save in the rare instances where an architect can persuade his client that his possessive pleasure will compensate his extra expense.

Private enterprise—if we except factories run up or extended for the purposes of war output during the war—was as stationary as traffic held up by a policeman's hand, and, when released, resumed its former somewhat unenterprising course. Business premises and hotels have been enlarged or transformed, but the sanitary work this has entailed has presented no radically new features. Some use has been made of the gravitation system of supply to cisterns in factories where many closets have been assembled in close proximity, and ranges of lavatories back to back have been fixed with one service pipe and one waste used centrally, so that the employees shall waste as little time as possible in fulfilling certain necessities of life.

Mention should be made of the greater facilities now demanded in factories for washing purposes, and the insistence of drinking water supplies direct from the main.

The London County Council quite recently have allowed within their jurisdiction the use of coated cast-iron soil pipes and drain vents inside houses, where formerly only lead pipes were allowed. It is not an innovation that sanitary experts are likely to endorse with their blessing, as such pipes will not last in the way that lead pipes will. The majority of iron pipes, which so seldom get coated with their solution at birth as they should be, soon rust, and eventually fail to fulfil their function. It is true that a lead pipe can have a nail driven into it by a careless workman, whereas an iron pipe will point out his offence, but how many instances are recorded? It looks like another nail in the coffin of the worker in lead.

Within the last few weeks I have come across a rather curious discrepancy in views of the size of overflows; on the one hand, in some quantities for a work in the North of England, the overflows to the w.c. cisterns were specified to be ½ in. diameter; and, on the other hand, in the case of some baths for a club in London, these were specified with 2 in. overflows.

Standards of measurements have been arrived at and authorised by agreement between the Surveyors' Institution, the Quantity Surveyors' Association, the National Federation of Building Trade Employers of Great Britain and Ireland, and the Institute of Builders, and I believe these measurements for the time being are approved of also by the National Associations of Master Plumbers, Painters and Decorators, Plasterers, Slaters and Tilers. There has been considerable divergence of opinion in measuring up work, and the laying down of a uniform table of measurements will be welcome, especially to quantity surveyors, as it will no doubt save them many an argument.

The Royal Sanitary Institute has had under consideration the By-laws issued by the Ministry of Health, and the London County Council Drainage By-laws, and a special committee was appointed to go into the matter.

The Reports of this Committee were adopted by the Council and the Institute notes were transmitted to the Ministry of Health and the London County Council.

The suggestions made were not received in time to be incorporated in certain modifications made by the Ministry of Health under date of November 1, 1923, but will receive attention before the next ordinary revision of By-laws is undertaken.

The recommendations include the deletion of earth closets and privies from the urban series, and of privies from the intermediate series, and other changes and amendments intended to modernise existing By-laws and bring them into line with modern practice, and to introduce additional By-laws in regard to sanitary fittings.

I have said that there has been little or no change in the principles of sanitation in recent years, but when sanitary fittings are reviewed a wider field of view opens up, and, although there is little strikingly new in the principles again on which these are made, many more fittings are required, and manufacturers have not been lacking, while providing for this demand, in introducing variant forms of new ideas this last decade.

The housing schemes make a demand for

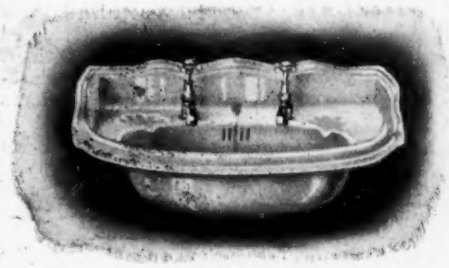


Fig. 2.

economical fittings that shall be simple in design, and easily kept clean; and at the same time the hotels, restaurants, clubs, business premises, &c., which are putting their houses in order, or extending their accommodation, require their new sanitary fittings to be improvements on what were acceptable a few years back.

In how many of the houses of the artisan class before the war could a bath be found? Now, thanks to the Ministry of Health, it is considered

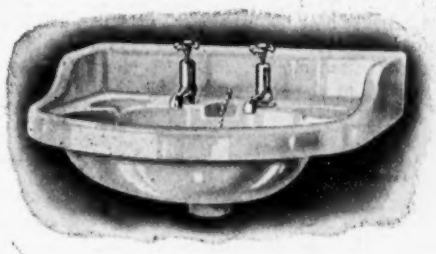


Fig. 3.

as imperative that the artisan and his family should have a bath at their disposal as those that move in the "upper circles" of society. Going over some of the dwellings in a housing scheme which was carried out during the war I found that all the baths had not been devoted to their original purpose.

In this scheme the bath was placed in the kitchen, and to prevent a greater encroachment on space than was absolutely necessary, a folding table cover to it had been provided, which was secured to the wall. In folding this back in some instances the bath was found to have been appropriated as a store bin; indeed, in some cases, it had supplanted the coal cellar, and its waste was clogged up with coal dust. The generation that is growing up, however, will soon see that advantage is taken of this advance on the old order of things.

Hotels no longer can satisfy their *clientele* with a bath on each landing, and the increase in the number of bathrooms is approaching the limit of bathroom per bedroom. A few days ago, to instance the trend of the times, I received a card which proclaimed "a beautifully appointed hotel, with bedrooms with private baths and complete toilet."

The old bathroom up till quite recent years was any room with a bath in it; but now, when economy is not the first and last essential, the best kind of bath in private houses and hotels should fit into the scheme of things, and be part and parcel of the bathroom itself, as in the manner indicated in illustration No. 1.

The bath adjusts itself to the walls and floor of the room, fits into the wall scheme of marble work or tiles, or whatever is employed nowadays, instead of the sodden and pealing paper of the old days. The appearance is distinctly pleasing. With what thankfulness we miss the four legs.

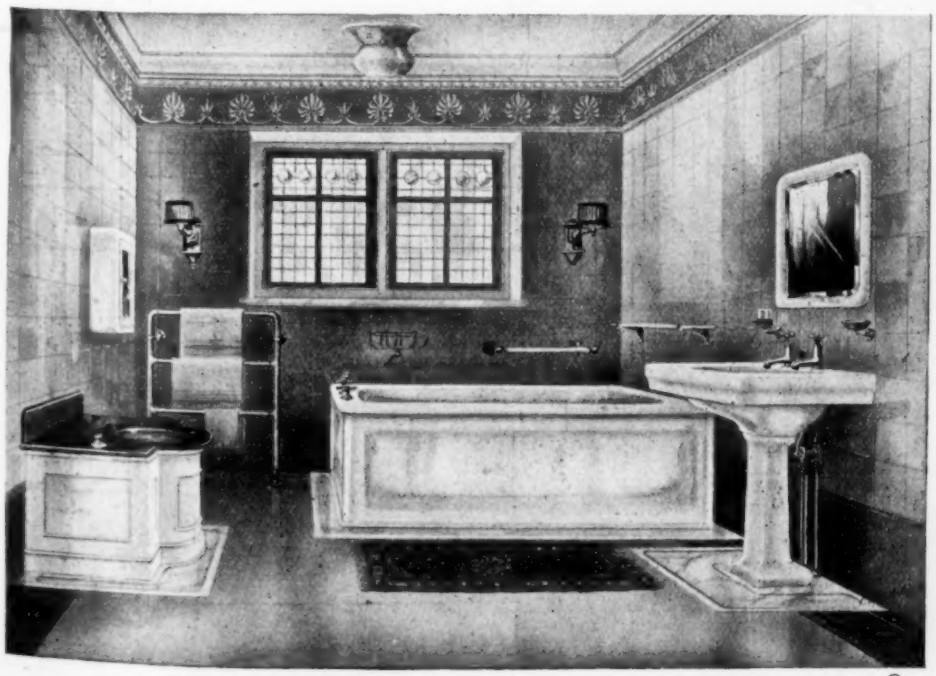


Fig. 1.

Legs are to be seen in all walks of life that yield no joy in the beholding, but what compares for sheer ugliness with the legs on most of the cast-iron baths?

The advantage does not end with the appearance. There is here no space under the bath where dust accumulates; no splashings to run down on the wall side of the bath and be neglected. Still another point in its favour is that this class of bath does not present the same difficulty for the short or medium size person to get in and out of as one with legs.

Lavatories, perhaps, lend themselves to greater variety than other sanitary fittings. They may be classed in three groups—whiteware basins set in marble tops of all colours of the rainbow; white fireclay or whiteware pedestal lavatories, as shown in illustration No. 1; and the simpler form of whiteware or white fireclay basins on cantilevers. None of these are entirely new forms in the last ten years or so, but all have been improved.

The lavatory basin shown in illustration No. 2 represents the ordinary type of inexpensive basin used some ten years ago, and indeed still being supplied. Compare it with the one shown in illustration No. 3, and mark the improvements in the latter; altogether simpler and more compact in design, with its rounded smooth contours; instead of the mouldings in the former, with an outline which could never have fitted into any scheme of wall design. How much neater the taps of No. 3, with their rounded shoulders, than those of No. 2, with their ledges, and how much more easily kept clean. No. 2 has the old slotted, more or less inaccessible, overflow, whereas this is replaced in No. 3 with a downright visible overflow inviting periodical attention easily given. Between the two lavatories illustrated no invidious comparisons are made, as they are produced from the catalogues of the same firm.

A new feature in lavatory and bathroom fittings is the introduction of a scheme of white throughout. Besides the larger fittings themselves, the taps, brackets, mirror frames, shelves, tables, towel rails, and all the other accessories and gadgets that can possibly be employed, are made in white glazed pottery, or, where metal fittings are required, these are supplied with a white finish. The idea is a sound one, but in private bathrooms personally I am still inclined to prefer nickel-plated valves and towel airers, which are easily kept clean and polished, and have a sneaking preference for glass shelves to break the somewhat drab effect of white everywhere.

A rather striking scheme consists of a range of whiteware basins set in black marble with nickel-plated valves. This would look well in a club lavatory, but would not harmonise with the white fittings and accessories in a bathroom.

There seems to be an increased demand for low level cisterns to be used with the ordinary type of pedestal w.c.'s. They reduce the noise when discharging, and are very useful when there is only a small head of water available.

An innovation traceable to American practice, where water restrictions are less arduous, is the use of a separate flushing valve in lieu of a cistern.

The valve w.c., shown in illustration No. 1, is not in so much demand because the water authorities in London consider it uses too much water, but it remains the best type of w.c. for all that. A w.c. through its soil pipe connects directly with the drain, unlike the waste from the lavatory, bath, or sink, which is not only trapped at the fitting as the w.c., but is again disconnected before entering the drain. The valve w.c., by means of the water standing in the basin, together with the trap underneath, with a ventilated valve box in between, is the best w.c. to guard against the entrance of drain air. It is the most silent, and the least likely to be fouled; the contents are the better submerged; they are entirely retained by means of the flap valve for inspection where desirable by a doctor—a point to which the late Sir Frederick Treves attached considerable importance—and are finally discharged in a "water envelope" through the soil pipe and drain.

HOT WATER SUPPLIES AND HEATING.

By A. C. MARTIN.

The outstanding fault on many existing cylinder systems of hot water supply is that the poor little fire-back kitchen boiler is not powerful enough to satisfactorily heat the large volume of water in the cylinder. Where the two fittings are out of proportion, and it is desirable to retain the fireback boiler, it is possible to improve conditions by cutting out the primary return connection and reconnecting it at a point higher up the side of the cylinder. This often entails raising the flow connection also. As a circulation within the cylinder can only occur above the point at which the return is connected, the water below will remain cool and unaffected by the heated water above. By this means, instead of the apparatus containing at its best a large volume of luke warm water, the more limited quantity is able to attain a high temperature. There is no difficulty experienced now in making extra connections to cylinders unprovided with manholes, as there is a device on the market which is specially adapted to meet the circumstances.

It is often an economical proposition to provide a variable store of hot water for domestic purposes. For instance, at certain times of the day copious volumes of hot water are required for bathing purposes. Between such times only a very limited volume of very hot water is required for dish-washing, etc. To obtain this smaller volume of very hot water entails in the ordinary way the necessity of heating up the whole hot-store capacity. This unnecessary waste of fuel can be avoided by putting in an extra return connection, as shown at B, Fig. 1. The branch return at A is governed by a valve of fullway pattern. When it is desired that the whole volume of water in the cylinder should be heated, the valve is opened. A circulation will then occur from the boiler between the level at A and the crown of the cylinder. When the smaller volume only is needed the valve is closed. Circulation within the cylinder will then only occur between the level at B and the crown of the cylinder. As water is a very bad conductor of heat, the volume of water below B will remain stagnant and cool. The respective volumes of heated water needed will be determined by whatever point the extra return connection is situated on the side of the cylinder; for instance, assuming a cylinder 3 ft. high and holding 60 gals. of water, and that at certain periods the whole capacity is needed and at other times 20 gals. will be sufficient, the return connection represented at B will be made at about 2 ft. from the bottom.

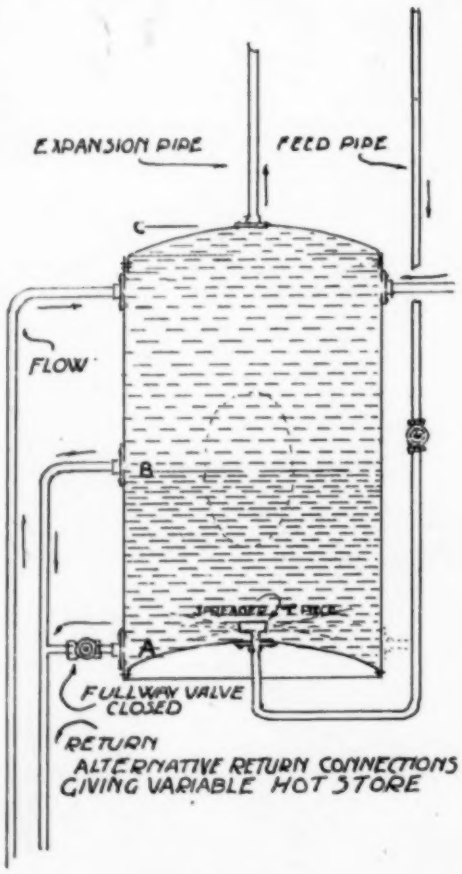


Fig. 1.

Fig. 2, illustrates, in conventional form, an apparatus heated by two boilers and provided with double return branches. To heat up and sustain the necessary temperature of a large hot store solely by gas is often not an economical arrangement in comparison with a boiler which will burn coke cinders and house refuse.

When the whole capacity of the cylinder is needed—for instance, providing a number of hot baths in quick succession—the valve on the low-return branch is opened and both boilers started. When it is inconvenient to light up the large boiler the gas boiler, with flow and return connections arranged at points on the cylinder as shown, will heat up the water in the top portion of the cylinder without undue consumption of gas. A further advantage given is that the water may be heated up by the solid-fuel boiler, and then allowed to die out. The gas boiler will then conveniently sustain the temperature to the demand. To ensure this provision automatically the gas supply should be governed by an automatic control valve. A popular and very satisfactory form of valve is that known as the "Thermostat." This is fixed in a low point on the cylinder or in the return pipe. When the water in the return pipe becomes hot—and this will only occur when the water above is well heated—the gas supply is automatically cut down by means of a short metal alloy rod, having a high expansion and contraction property. Fixed in the return pipe it actuates the gas-supply valve according to the temperature of the water. A small by-pass keeps the gas from being completely

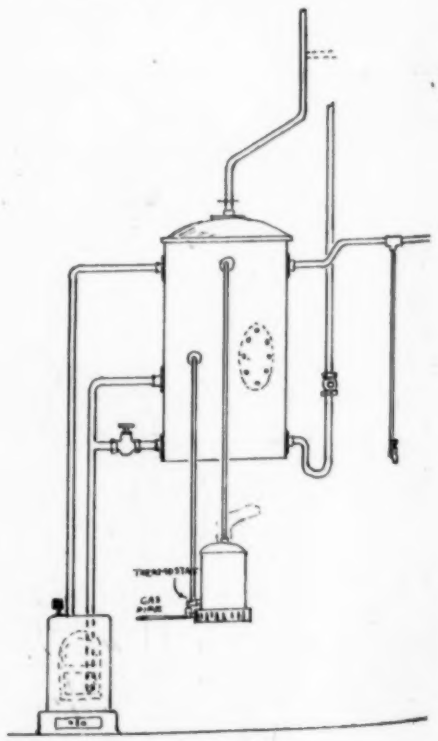


Fig. 2.

shut off, so that when, for instance, a bucket of hot water is drawn off the gas will immediately spring full on, owing to the influx of cool water along the return pipe on to the encasement of the actuating rod.

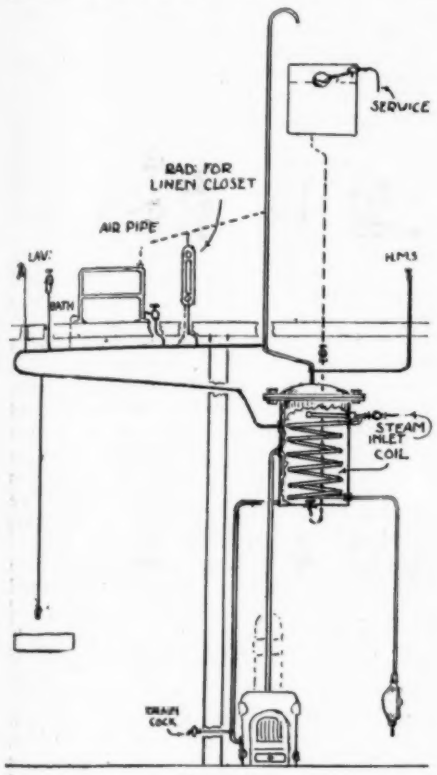


FIG. 3.

Automatic Control to Steam Heaters.

Where steam is generated on the premises for any purpose, advantage of its latent heat values is often taken to heat up water for domestic or other supplies. The economical way of effecting this is by blowing the steam directly into the water. As this procedure is accompanied by noises similar to that of a battery of machine-guns at work, such a method is only employed in slaughterhouses and factories, where the noise will be no objection when balanced with the saving in cost. The essential factors needed ordinarily are: A constant supply in steam at a good working pressure; a copper coil or box within a jacket, such coil or box to present sufficient surface to raise the water surrounding it to a temperature high enough for the requirements of the establishment; a steam trap to automatically discharge the condensed steam to some convenient point. Fig. 3 shows a calorifier fixed to supply hot water to a group of sanitary fittings. A boiler is shown in addition, to heat up the water in the event of the steam being cut off. With a constant supply of live steam at a good working pressure this boiler would be unnecessary. To prevent overheating and consequent loss of steam the supply is controlled by an automatic valve, which is regulated to cut off the steam when the water in the calorifier is at the required temperature. Steam passes in this case through a copper coil. The steam trap is necessary with all such fittings to automatically discharge the condensed steam and at the same time prevent the escape of live steam. The greater the difference between the temperature of the water surround and the steam within the coil, the more rapid will be the rate of condensation. Where a number of these traps are used it is often convenient to gather the water in a pipe and lead it back to the generating boiler. The advantage of this method is that the water, being hot, it will not take so much fuel to reconvert it to steam in comparison to water direct from the cold service. If a cast-iron radiator, as shown, is fixed on a hot-supply service to heat a linen store, it should be treated by the "Bower Barrff" process, to prevent rusting of the internal surfaces. This is necessary whether the water is "hard" or "soft." If hard, the lime is precipitated before it gets to the radiator, so that it becomes virtually a soft water. This is a point often lost sight of in hot-water work. The chief objection to the rusting is in the fact that the water drawn off at the taps will be red, and objectionable for all domestic and other purposes. Fig. 4 gives an enlarged sectional view of a similar calorifier fitted with the thermostatic valve; the section of this valve is somewhat similar in construction to that of the following figure. The piston which closes and opens the valve is actuated by a sensitive liquid contained in the sealed tube; where movement is required to smaller fluctuations of temperature the type shown in Fig. 5 is recommended. The section as drawn should be self-explanatory.

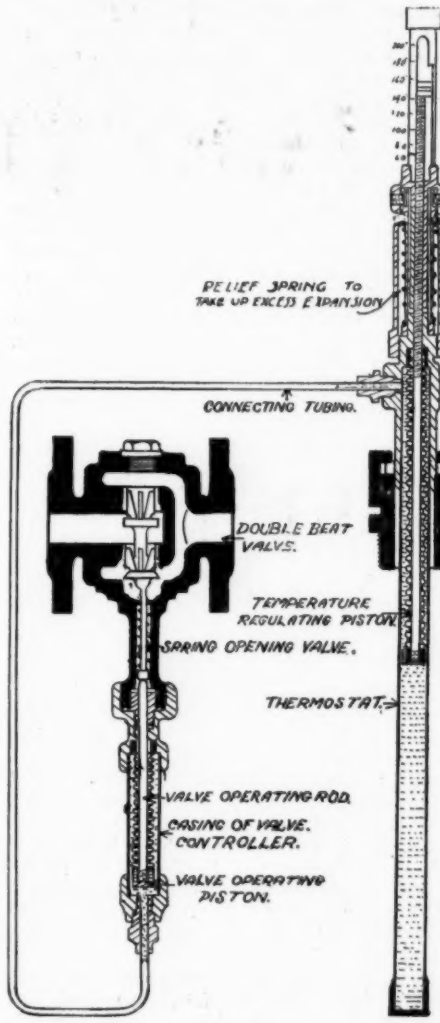


FIG. 5.

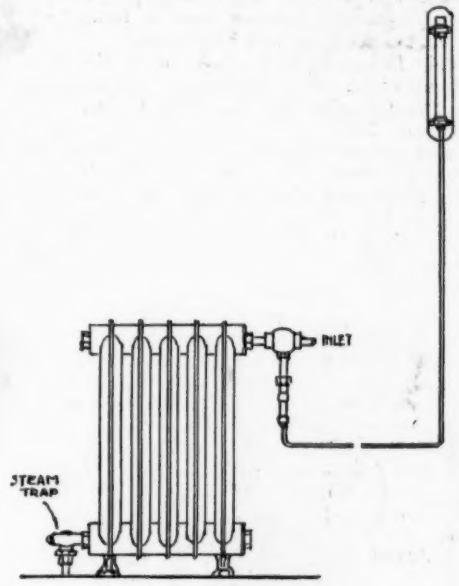


FIG. 6.

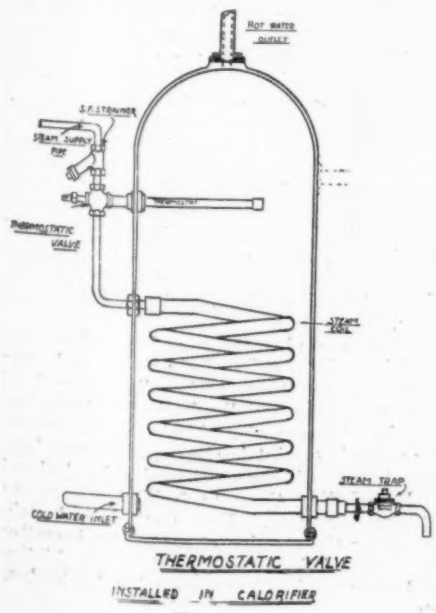


FIG. 4.

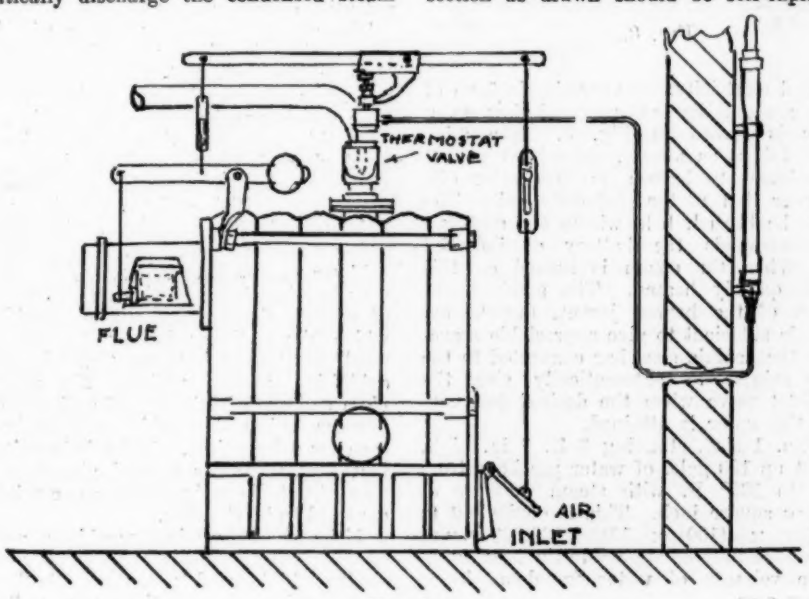


FIG. 7.

The type is used for screwing into a calorifier "known as the liquid type." Another form, "room type," will actuate a valve on a radiator or damper of a boiler by the fluctuations of the temperature of a room or on the external atmosphere. Automatic damper regulation has previously been contrived to shut down at certain boiler temperatures irrespective of outdoor temperature. This method is not ideal when the large fluctuations of temperature, even in this country, is considered. For ideal conditions the temperature of the water in a boiler applied to heating of rooms, and for various drying purposes in factories, should increase with a falling external temperature, and *vice versa*.

This fitting is designed to meet the need automatically. The application is shown in the two following figures. Fig. 6 shows the appliance fitted to regulate the temperature of a single radiator on the temperature of the room in which the thermostat is situated. Fig. 7 shows a similar device fitted on the external face of wall to regulate the dampers on a boiler. The fitting may be applied to the regulation of gas supply, steam, hot

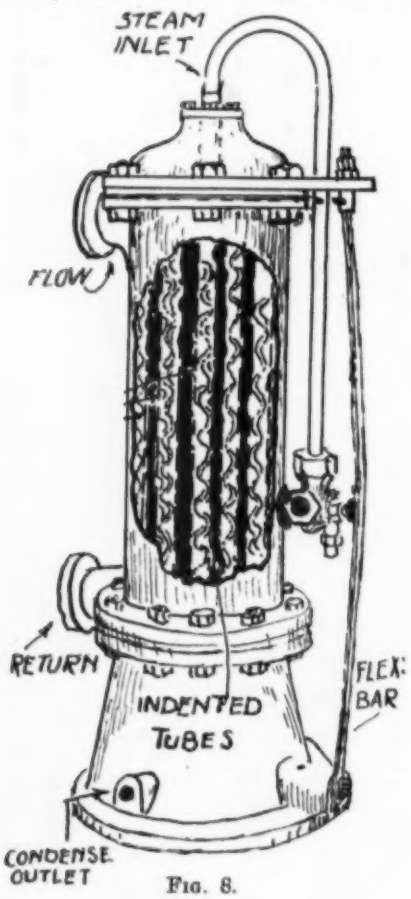


FIG. 8.

water, and electricity. A very simple form of automatic regulation on steam inflow to a calorifier is shown in Fig. 8. The 2-in. indented tubes, as shown, have been proved by experiment to have a much greater efficiency over that of the plain-tube coil. The water to be heated, held within the cast-iron jacket, surrounds the battery of indented tubes. When the steam is turned on this water is quickly heated. The small linear extension of the heated jacket, due to expansion, is sufficient to give appreciable movement to the flexible steel bar connected to the extreme points, to automatically close the steam inlet valve when the desired temperature of the water is attained.

The No. 1 size, standing 3 ft. 6 in. high, will heat up 100 gals. of water per hour from 50° F. to 180° F. with steam pressure at 50 lb. per square inch. This is equivalent to (180−50) × (100 × 10) = 130,000 B.T.U. The calorifier may be applied to the heating up of large volumes of water for domestic or other purposes.

MACHINERY AT THE BUILDERS' EXHIBITION

BY STAFFORD RANSOME.

THE Builders' Exhibition, which opens to the public at Olympia to-day (Friday) and will continue until the 26th inst., promises to be an unusually interesting one, especially as far as the machinery section is concerned. The fact that there has been a gap of two years, since the series of three annual exhibitions terminated in 1922, has allowed more scope for appreciable improvements in designs than is the case when an exhibition is held every year. This particular two years has been what may truly be described as a period of recuperation in the engineering world, a terribly slack time which followed an abnormal post-war rush when the firms concerned had but little time to think of new designs or of anything but getting the work out. During these last two years, however, our manufacturers have been putting their houses in order, have definitely formulated their respective permanent policies and, above all, have realised what they are "up against" in the way of competition at home and abroad. The net result has been that very great and in some cases drastic improvements have taken place in the designs of builders' machinery during the two years in question, and these are very clearly demonstrated at the present show.

Although the Builders' Exhibition is especially an all-round display of builders' requirements generally, we find in each succeeding exhibition a growing preponderance of mechanical exhibits, especially if we reckon them by the amount of space occupied by this class of product. These mechanical exhibits may be divided into two distinct categories, viz., those which are used by the builder himself to assist him in the preparation and erection of his materials and the carrying on of his work generally, and those which form part of the installations which he is erecting, such as ventilating and heating plant, pumping and lighting installations, and so forth.

Although many of these latter are intensely interesting and this class of exhibit is well represented, it is not my purpose in this article to deal with them. I propose merely to consider the former, *i.e.*, the builders' machinery proper. Of these machines, wood-working machinery naturally preponderates in a very marked manner. This in a general way is mainly due to the fact that the manufacturers of wood-working machines, who have no periodical exhibitions of their own, have seized upon the Builders' Exhibition, much as the manufacturers of agricultural machinery have seized upon the annual Cattle Show, as the natural opportunity for displaying their wares to a public which is mainly composed of potential customers.

There may be another reason why in this respect there is a larger quantity of machinery than in the past, and this is that nearly all the firms concerned have decided to refrain from showing at the Empire Exhibition. However this may be, there are at least one hundred and sixty wood-working machines shown by about twenty firms, of whom some fifteen are British and the remainder mainly Belgian and French makers, while there are a few American machines.

If we except log-sawing machines and the very heaviest types of planing machines, and, of course, those many special machines for which the ordinary builder has no use, it would not be unfair to say that this particular exhibition affords perhaps the most complete and varied selection of ordinary general-purpose builders' machinery that has been seen for a long time. And this in spite of the fact that there are several absentees in the way of notable makers whom one might have expected to be showing.

Although log-sawing machines are, with one exception, conspicuous by their absence, modern high-speed re-saws of both British and foreign construction are well represented. These are all of the band or circular-saw variety, mainly the former; and it is a sign of the times and a tribute to the growing ascendancy of the band-saw for this class of work, that there is no such thing as a deal frame among the exhibits. This may be partly because a frame-saw is a cumbersome machine to fix and demonstrate in an exhibition which only lasts a fortnight, or because it may be thought to be too well known to need demonstration; but its total absence seems to point to the suggestion that it is no longer regarded, as was the case in the past, as one of the most essential of machines for the builder who was large enough to require much re-sawing.

There is a great variety of saw benches for all sorts of work, many of which possess new features. There are dimension and roller and sliding-table and chain-feed saws, and in the designs of some of them it will be noticeable that American practice has had some influence, while in other cases it is equally unmistakable that recent Home Office regulations for protecting the blades have affected their construction.

Planing machines are in great variety, from the latest high-speed 4- or 6-cutter planers and moulders down to all types of surfacing and thicknessing machines and combinations of the two. It is particularly in the thicknessing and hand-feed surfacers that the great variety of makers who are directly competing becomes apparent, and one wonders, if all these firms are kept busy on such machines, where in the world there can be a market for them. In this respect the planers are surpassed only by the chain mortiser, samples of which will be met with at every turn in this exhibition. There are at least ten firms who are exhibiting one or more of these.

Tenoning, boring, housing, dovetailing, and sand-papering machines, and vertical spindle moulders and lathes are also shown, and among the novelties will be demonstrated certain adaptations of the flexible drive to portable or movable wood-working tools. Small planers and saws and lathes, which can be readily fixed to, and as readily removed from, a bench, and each self-contained with its own electrical motor, are an interesting feature, as also machines for truing up and polishing fixed flooring.

General joiners are less numerous than on previous occasions, being represented by only three samples. This seems to confirm a contention recently expressed in these columns to the effect that since electricity has simplified the driving of separate machines there is less demand for the combined machine.

There are the usual assortment of safety appliances and sharpening machines, and two of the most striking features are the developments in electrical driving and the progress that has been made in the manufacture and utilisation of thin high-speed steel cutters.

Prominent among the builders' plant, apart from wood-working tools, are many varieties of concrete plant, including mixers and distributors, and brick, slab and tile-making machines, paint and other pigment grinders, mixers and distributors, stone crushers, derrick and other cranes, hoists, winches, trucks, run-ways, tipping skips, oil engines, and pumps of various sorts.

There are also stone and marble-working machines for sawing by gravity, and other saws, cross-cutting and polishing, and all sorts of saws especially destined to be used on metals. A new and rapid air-acetylene process for removing paint is shown, and a very large assortment of every conceivable builders' tool, including those to facilitate the process of paper-hanging. New methods and appliances for the erection of scaffolding is another feature, and there are a great variety of lifting and other tackle, blocks, wrenches, bar benders, etc.

Sewage plant is also seen: septic tanks, distributors, water-softeners and filters, and machines for cleaning drains and other tubes and pipes, and for smoke testing, and systems for applying lime washes and distempers by the spraying process.

The Builders Exhibition is essentially a business function, lasting a fortnight and possessing no extraneous attractions to bring the idler or the sightseer. Nor has it the fascination for the general public that is possessed by the motor show or the electrical exhibition in these days when everybody is a potential motorist, and everybody likes to think himself his own electrician. Its appeal, however, which, of course, is primarily to the builder and the architect, should extend far beyond that industry and that profession, for there is much in it to attract the engineer, the doctor, the sanitary authority and the exporter. Besides all these, however, any intelligent householder who likes to gain an insight as to the brain power required and the resultant appliances for building and decorating the house he lives in will find an immense amount to interest him in the Exhibition.

THE STANDS.

BELOW we give a further list of the exhibitors at the Exhibition together with particulars of what is being shown on the different stands.

Acme Patent Ladder Co. (EARLSFIELD, LONDON.) **Stand No. 173, Row J.**

Ladders.—This firm has on exhibition a large variety of their patent telescopic extension ladders to extend by ropes, pulleys and patent springless automatic locks. "Guildhall" pattern scaffold trestles are also shown.

The Adamite Company, Ltd. (REGENT HOUSE, REGENT-STREET, LONDON, W. 1). **Stand No. 98, Row E.**

Cement.—The Adamite Company, Ltd., are showing "Atlas White" portland cement and "Colemanoid" ("Colemanite"). The principal exhibit on Mr. Coleman's stand is "The Spirit of the Rocks," a statue executed in white cast concrete stone, the sculptor being Mr. F. Doyle Jones. The aggregate employed with the "Atlas White" portland cement to produce this cast-stone is Cornish granite, the cement being brushed off the surface to expose the aggregate. The production of the stone in which "The Spirit of the Rocks" is cast is in the hands of Messrs. Emerson & Norris, Ltd. Beside "The Spirit of the Rocks" Mr. Coleman is showing a doorway in a manner of the Tudor period, suitable for domestic buildings. This doorway is also carried out in cast concrete stone by Messrs. Emerson & Norris, Ltd. In America, many buildings have been erected in cast concrete stone, some of which, it is claimed, are as beautiful as stone work centuries old. The cast stone in the doorway, which is shown on the Adamite Company's stand, is manufactured from "Atlas White" portland cement and selected aggregate carefully graded. The doorway is so arranged that it will illustrate both exterior and interior finishes. Many other examples of the use of "Colemanoid" and "Atlas White" portland cement, in various lines of interest to architects and contractors, are shown, as well as a comprehensive exhibition of British aggregates.

Adams, Robert (HOLBORN, LONDON, W.C.1). **Stand No. 58, Row D.**

Engineering Specialities.—This exhibit includes working models of the patent "Victor" door spring hinges, Robert Adams' patent fanlight openers and ventilating gearing, "Victor" universal system of reversible fittings, &c.

Alabastine Co. (British), Ltd. (CHURCH-STREET, SOUTH LAMBETH, LONDON, S.W.). **Stand No. 138, Row G.**

Paint.—Here are shown examples of Church's Alabastine, a dry powder ready for use in cold water. It is a cement which forms permanent coats, admits of recoating from time to time without removing old coats, and hardens with age. Examples of "Jelstone" distemper in numerous distinctive colours are also shown. Both products are made in England entirely from material produced in the United Kingdom, and are the production of British labour.

Alexander, Herbert & Co., Ltd., (CHARMOUTH-STREET, LEEDS). **Stand No. 221, Row L.**

Brick Machinery.—This firm is exhibiting some of their brick-making machinery, together with various samples of bricks produced on such machinery. Amongst the exhibits will be sand-lime bricks, magnesite refractory bricks, also bricks made on the stiff plastic process from shale, and on the plastic wire-cut process from plastic clays.

Allen-Liversidge, Ltd. (106, VICTORIA-STREET, LONDON, S.W.1). **Stand No. 292. Row Q**

Acetylene.—The purposes to which the various combinations of acetylene can be put are explained on this stand. The building and contracting trades incorporate the practice of many branches of engineering work, and, although some of them are vastly diverse in character, nearly all of them have this in common—that, either as a prime factor or as an auxiliary, they find a use for acetylene in the various operations which their requirements demand. For use on a large scale dissolved acetylene is especially recommended. A portable plant is essential; oxy-dissolved acetylene cutting equipment is extremely portable. Dissolved acetylene cylinders supplied for metal-cutting purposes range from those containing 50 cubic ft. of acetylene upwards. The 50 cubic ft. cylinder is very convenient for short period intermittent work on account of its lighter weight (some 40 lbs. only). The use of A-L "Imperial Lights" and A-L "Da-Lights by builders and contractors eliminates the trouble and expense, it is claimed, involved by the temporary erection on the site of the work of electrical plant and the necessary complicated wiring systems.

Art Metal Equipment Co., Ltd. (184–188, SHAFTESBURY-AVENUE, LONDON, W.C.2.) **Stand No. 108, Row. F.**

Metal Equipment.—The Art Metal Equipment Co.'s exhibit consists of shutters of rolling steel doors made of interlocking steel slats, the working parts being fitted with ball bearings to ensure ease of operation. Despite the prosaic utility of the shutters they are in nowise an eyesore, and the harmony and beauty in a building, it is claimed, are not in the least destroyed by the intrusion of these necessary aids to safety.

The Bath Artcraft, Ltd. (111, OXFORD-STREET, LONDON, W.). **Stand No. 162. Row H.**

Carving.—The exhibits of the Bath Artcraft, Ltd., are contained in a stand of simple architectural outline, but with a certain freshness in design and character. Part of it comprises a portion of a dining-room panelled in oak with Grinling Gibbons' style of carvings in lime-tree. Another portion represents part of a room panelled in mahogany. One end of the stand is fitted with a bay window and at the sides are displayed a series of hardwood doors in oak, walnut, teak, &c., some of these are flush doors suitable for office and hospital use; others are framed, panelled and moulded. Some recesses are fitted with wood mantelpieces and with various styles of wood panelling. Part of the floor is laid in oak and parquetry, and part covered with Velvuto rubber flooring; a new special floor material produced by an associated firm, the Bath Rubber Mills, Ltd., Norfolk Works, Bath.

Batsford, B. T., Ltd. (94, HIGH HOLBORN, W.C.1). **Stand No. 86. Row E.**

Books.—Messrs. Batsford's stand contains a full range of their publications for architects, surveyors, builders, interior decorators and craftsmen. Prominent among the works shown are: Mr. Gotch's "Architecture of the Renaissance in England"; Sir Banister Fletcher's "History of Architecture" and text-books on professional practice; Professor Richardson's "Monumental Classic Architecture" and "London Houses"; Mr. Aymer Vallance's "Old Colleges of Oxford"; Mr. Crossley's "English Church Woodwork" and "Church Monuments"; Mr. Stratton's "English Interiors"; Mr. Statham's "Critical History of Architecture"; Miss Jourdain's "English Interiors from Smaller Houses, 1660–1800"; Mr. Godfrey's "Architectural Guide to London"; Mr. Yerbury's "Studies of the Human Figure"; Mr. Gordon Allen's "Cheap Cottage and Small House"; Mr. Ellis's "Modern Practical Carpentry and Joinery"; Mr. Mitchell's "Building Construction"; Mr. E. H. Blake's "Drainage and Sanitation"; Mr. Rea's "How to Estimate."

The Birnwell Iron Company, Ltd. (BRITISH COLUMBIA HOUSE, 1, REGENT STREET, LONDON, S.W.1). **Stand No. 14, Row B.**

Ironwork.—The Birnwell Iron Co., Ltd., are exhibiting on their stand specimens of the "Birnwell" hot-water boiler and stove. A marked feature of the stove, it is claimed, is its easy accessibility. Also a special damper is so placed that the maximum of heat gases encircles the underside of the hob, providing a highly efficient hot-plate and perfect control. Another distinct advantage is that owing to the special design of the ash-pit ashes fall directly into the pan and nowhere else. This saves excessive dust in the room, and the ashpan is so designed that the ashes can be emptied without even turning the ashpan over. It has been designed to combine the maximum efficiency with perfect combustion. Apart from these advantages which the makers state the "Birnwell" alone possesses, the finish and workmanship throughout make it attractive in appearance and satisfactory in service.

Briggs, William, & Sons, Ltd. (5, COWGATE, DUNDEE). **Stand No. 34, Row C.**

Bitumen.—Messrs. William Briggs & Sons, Ltd., Dundee and London, make a special display of their natural bitumen damp-courses and roofing felts. Models and specimens illustrating their "Challenge" composite roofing system are also on view. The system consists of laying either two or three layers of Briggs' "Challenge" roofing, either direct to wood boarding or concrete, on flat and slightly pitched roofs. On wood roofs the first layer is nailed to the boarding, whilst on concrete it is securely bonded to the surface by means of "Challenge" bitumen applied hot; each succeeding layer of roofing is firmly bonded and hermetically sealed to the preceding layer by means of "Challenge" bitumen applied hot, and the finished job is an extremely durable roof covering, having, it is claimed, all the advantages of the much more expensive systems at less cost. A feature will also be made of Briggs' "Utex" roofing.

"The Builder, Limited," has two stands, namely, **Stand No. 126, Row F,** where there are reception rooms; a display of books of interest to the architectural, building and allied professions; models of "Old London Bridge," "Old St. Paul's," "Mill Lock" (the recently discovered second arch of Old London Bridge), "Old Westminster," and models of houses with three and four bedrooms made from the winning designs in *The Builder* Cost of Building Competition; news, lectures and music by wireless; and architectural illustrations displayed by means of a new type of electric optical lantern. The other **Stand, No. 245a, Row N,** is for the sale of *The Builder* only and for general information.

Builders & Contractors Plant, Ltd. (51, TOTHILL-STREET, LONDON, S.W.1). **Stands No. 250, 251, Row N; Stand No. 261, Row O.**

Machinery.—Messrs. Builders & Contractors Plant, Ltd., show "Exe" Hoist No. 1 and No. 2, and a recent development of the "Exe" Hoist No. 1, consisting of a concrete tipping

carriage with silos, swivel elbow joints and chuting for using the "Exe" hoist as a concrete-pouring plant. Another "Exe" development was too big to come in Olympia; this consisted of the "Exe" concrete-placing plant. Actually on the Stand are illustrations of these machines at work in different parts of the country, and the power unit—a 10 h.p. "Climax" semi-Diesel engine, a highly efficient low h.p. low grade oil consumption engine capable of working at about 2½d. per hour. Everything in hoisting is represented, as besides the "Exe" and the "Exe" hoist crane, two small and handy hand-derricks for barrow hoisting, and a range of chain and self-sustaining "Monarch" rope hoists, as well as an overhead runway are displayed. The "Roll" concrete mixer is represented, and other interesting exhibits are the "Ama" concrete block machine; and a useful auxiliary in the "Rapid" slab machine.

Cakebread, Robey & Co., Ltd. (High-road, Wood Green, N. 22). **Stand No. 51, Row C, and Stand No. 209, Row K.**

Ironmongery.—Messrs. Cakebread, Robey & Co., Ltd., are exhibiting their latest exclusive designs of wood chimney pieces and tiled fireplaces, including their "Caroba" hearth fires; also a special display of sanitary goods, including white porcelain enamelled baths, lavatory basins, pedestal closet suites, and bath-room fittings, &c.

Callender, George M., & Co., Ltd. (25, Victoria-street, Westminster, S.W.1). **Stand No. 67, Row D.**

Bitumen Products.—This stand is demonstrating the following products: "Callendrite" sheeting, a waterproofing medium for open and covered service and storage reservoirs, filter beds, swimming baths, lakes, ponds, &c.; "Callendrite" dampcourse, for foundations; "Ledkore" dampcourse, composed of a core of sheet lead with a special bitumen covering both sides, containing no coal tar or pitch, and suitable for all climates and purposes; "Protex," for keeping walls dry; "Bitusol" paint for iron and steel work of all descriptions, claimed to be an absolute preventative of rust; "Veribest" ready roofing, a self-finished roofing material prepared from pure refined bitumen in 1, 2, and 3-ply; "Bitufelt" roofing, a bitumen roofing felt supplied in rolls 36 ft. long by 3 ft. wide; "Rooferite" plain finish bitumen felts for roofing, sarking and lining purposes, in rolls 15 yds. long by 1 yd. wide; "Bituline" insulating paper, a bitumenised tough heavy paper for use in cold storage and building work; "Bitubond" building composition, which, when poured hot into cavities formed by two brick or stone walls, fills every interstice in the inner wall faces, rendering the wall impervious, non-conducting, sound and temperature proof; and "Plastaleke" asbestic-bitumen cement, for the rapid and easy repair of leaky roofs of all kinds.

Camp & Co., Ltd. (41B, Blenheim-crescent, Ladbroke-grove, London, W. 11). **Stand No. 276, Row P.**

Sash Chains.—This firm is exhibiting the "Sollink" sash chain, which is being shown for the first time at the exhibition. The "P.C." metal shears are also being shown for the first time.

Cardon & Co., Ltd. (Chespale Works, Penshurst Station, Kent). **Stand No. 54, Row C.**

Fencing.—This firm exhibit examples of "Chespale" fencing.

Collier, S. & E., Ltd. (Grovelands, Reading). **Stand No. 59, Row D.**

Bricks.—The exhibit of this firm takes the form of a pavilion, which occupies a site 20 ft. × 10 ft. exposed on three sides, and is rectangular on plan, designed as a garden house or tea room, with double recessed semi-circular arch and splayed jambs, and tile imposts forming entrance, with a pair of painted transparent green doors at one end, and at each side a semi-headed window flanked by lead glazed and bright red brick bull's-eye windows.

Concrete Utilities Bureau (35, Great St. Helens, E.C.3). **Stand No. 115, Row F.**

Information on Concrete.—The Concrete Utilities Bureau, an organisation for encouraging and advocating the use of concrete, is represented. All who are interested in concrete for any purpose and who may have any points upon which they wish enlightenment are invited to seek the assistance of the Bureau free of charge. Publicity literature on the manifold uses of concrete may be obtained.

Cooksley, A. (21–25, Tabernacle-street, London, E.C.2). **Stand No. 88, Row E.**

Woodworking Machines.—On this stand are shown woodworking machines of various types and patterns.

Crittall Manufacturing Co., Ltd. (246, High Holborn, W.C.1). **Stand No. 153, Row G.**

Metal Windows.—Metal windows of every description are shown. Amongst the novelties is the new "Zincspra" process, which is applied to metal windows to make them rust-proof. Another novelty will be a special new range of standard windows produced for use in tropical countries, and a new type of hospital window. Architectural bronzework and a range of various standard metal windows and doors are included in the exhibit.

Davis Gas Stove Co., Ltd. (60, Oxford-street, London, W. 1). **Stand No. 154, Row H.**

Gas Stoves.—This firm display many examples of their manufactures, including (1) "Rubston" gas fire-places; (2) "Nautilus" gas flue blocks; (3) improved "Nautilus" coal grates; (4) "Alpine Extended" gas range; (5) "Garba" portable gas heater; and (6) "Rose" and "New Shamrock" geysers.

Dawson & Co., Ltd. (York-road, Battersea). **Stand No. 277, Row P.**

Sanitary.—The exhibit includes: Sanitary Section: A large selection of white enamelled and "Ephos" brownware drainage channels, Dawson & Co.'s improved stable gully, Mendip gully, and anti-back flow gully; also the "Lixall" interceptor with access eye and chamber combined. Brick Section: A large selection of samples, comprising Kent stocks of various qualities.

Dominion Machinery Co., Ltd. (Union-street South, Halifax). **Stand No. 75, Row D.**

Woodworking Machinery.—The Dominion Machinery Co., Ltd., show some of their woodworking machines and exhibit for the first time their "Super Elliot" woodworker (patented).

Drew, Clark & Co. (Diamond Patent Ladder Works, Leyton, E.10). **Stand No. 204, Row K.**

Ladders.—On this stand are shown Drew's patent telescopic ladders, in two, three and four sections, and from 9 to 90 ft.; Drew's patent decorator's ladders, platform steps, scaffold trestles, tower ladders, and Higgs' and Drew's patent "Raprig" sectional scaffold. The last-named is for interior decoration, and combines lightness with great strength. It is simple to erect, and is claimed to be the ideal scaffold for interior decoration of institutions, clubs, hospitals, theatres, cinemas, public buildings and business houses.

Drytone, Ltd. (73, Gower-street, W.C. 1). **Stand No. 61, Row D.**

Woodwork.—The exhibit comprises "Drytone" doors. They are stocked in three materials, British Columbia pine, Western hemlock, and red cedar; and in two sizes, namely, 6 ft. 4 in. × 2 ft. 4 in., and 6 ft. 4 in. × 2 ft. 8 in. Also a selection of "Drytone" panelling and "Drytone" furniture is shown.

Evans & Ronald, Ltd. (7, Denman-street, London, S.E.1). **Stand No. 23, Row B.**

Fittings.—On this stand are shown: (1) The "Evron" patent bullet catch and bolt combined, in which there is no necessity for a lock and key when using the bolt; (2) the "Eddoll" patent gate latch, which ensures a gate being shut; (3) the "Cubitt" patent electric light bulb director, which may be easily fitted to the flex and enables the light to be thrown at any angle and in any direction; and (4) the "Riddick" patent door furniture, which is easily fitted and does not require screws.

Freeman, Joseph, Sons, & Co., Ltd. (Wandsworth, S.W. 18). **Stand No. 312, Row R.**

"Cementone."—This exhibit indicates the possibilities of decorative work in cement, concrete, plaster, roughcast, &c., by the use of Freeman's "Cementone" products for colouring and glazing these materials by incorporation and surface application. Examples are shown in panels of roughcast, tinted in various shades, by the incorporation of No. 1 "Cementone"; coloured concrete scullery and kitchen floors, wall dados, steps, garden paths, rockeries, tiles, &c., down to buttons, are illustrated in permanent colours. Variegated designs, resembling marbles and granites, mosaics and composition flooring, are also shown. Freeman's No. 7 "Cementone" coloured glazes, No. 4 "Cementone" waterproofing liquids, and No. 8 "Cementone" liquid concrete hardener are exhibited.

Gawthorp & Sons, Ltd. (4, Trafalgar-square, London, W.C.2). **Stand No. 270, Row P.**

Metalwork.—An exhibition of wrought-iron work for domestic and ecclesiastical use, "Culu" brass, alabaster and marble memorials, repousee copper fittings, stained glass and oak panelling, and general fittings.

Haigh (Oldham), Ltd. (Globe Iron Works, Oldham). **Stand No. 208, Row K.**

Woodworking Machinery.—This firm is showing: Rising table saw bench, single-spindle dimension saw bench, high-speed tenoning machine, fret-sawing machine, surface planers, panel planer and thicknessing machine, combined over-and-under planer, three- and four-cutter planer, chain-mortising machines, universal woodworker, automatic dovetailing machine, vertical spindle moulder, band-sawing machine, and grinding machines.

Haigh, Wilson & Co. (50, Grey-street, Newcastle-on-Tyne). **Stand No. 7, Row B.**

Steel Frames.—A feature is a standard steel frame, 21 ft. span, supplied in any desired length, or for erecting two or more bays abreast.

Haunchwood Brick & Tile Co., Ltd. (Nuneaton). **Stand No. 62, Row D.**

Bricks.—This firm is exhibiting samples of their manufactures, including numerous kinds of blue and brindle bricks, including 3 in. pressed blue bricks without frog for L.C.C. sewer contracts, pressed blue bricks with frog 2½ in. or 3 in. thick, blue stable and path pavers, blue kerbings and channellings, blue platform and wall copes, garden edging, red, blue, buff and salt-glazed ventilating bricks, red and blue flooring quarries, red, blue and buff ridges and finials, red, blue, buff and salt-glazed chimney pots, firebricks and fire-quarries, sanitary pipes and connections, garden vases, land drain pipes, hollow blocks, sand-faced fireplace bricks, &c.

Hooley Hill Rubber & Chemical Co. (Audenshaw, near Manchester). **Stand No. 37, Row C.**

Rubber.—Exhibited on this stand are varieties, shades and thicknesses of rubber flooring and tiling, &c.

Hopton-Wood Stone Firms, Ltd. (Wirksworth, Derbyshire). **Stand No. 246, Row N.**

Stone.—This stand has been carried out completely in stone to demonstrate the uses of the products of the firm.

"Hurry" Water Heater Co. (39, BROAD-STREET, BIRMINGHAM). **Stand 199, Row K.**

Water Heaters.—This firm is showing their ordinary designs of water heaters which are of the storage method, and rather differ from the ordinary geyser, as the latter is not of the storage. "Hurry" geysers for small property are also shown, and a special show is made of "Hurry" furnaces or coppers, which are a special design for delivering hot water to a bath, and also for washing clothes, similar to the ordinary furnace.

Interoven Stove Co., Ltd. (156, CHARING CROSS-ROAD, LONDON, W.C.2). **Stand No. 210, Row K; Stand No. 233, Row L.**

Stoves.—The Interoven Stove Co., Ltd., show both the "Interoven" and "Super-Interoven" convertible cooking and heating stoves (Pascall's Patents), for cooking all meals, baking bread and pastry, and giving ample supply of hot water for baths and domestic purposes and a comfortable fire all day. They are instantly convertible from cooking stove to open fire sitting-room grate, and save coal, space and labour. The "Bewty" expanding barless fire fronts (Pascall's Patent), for modernising old-fashioned sitting and bedroom grates at a small cost; and the "Bewty Minor" and "Bewty" dog grates are shown, together with the "Ten-in-One" adjustable stool bottom grates (Pascall's Patent), and the wrought welded range boilers of every description.

Johnson's Reinforced Concrete Engineering Co., Ltd. (23, LEADENHALL-STREET, E.C. 4). **Stand No. 146, Row G.**

Concrete.—This firm display the following specialities of concrete reinforcements: Lattice: This mesh reinforcement has been designed and is manufactured exclusively for concrete floors, roofs, walls, roads, culverts, tanks, and similar constructions. It provides for a completed article ready for laying in concrete, reducing the labour charges and risk of displacement to a minimum. "Keedon" fitments used in conjunction with ordinary round mild steel bars for concrete beams, columns, &c., have proved to be both efficient and economical, and, in application, have the advantage of combining rigid and yet adjustable members with a non-slipping bar. "Bricktor," it is claimed, is the reinforcement for all kinds of brick-work, partition slabs, concrete block work, &c., where extra strength and lightness of construction are required.

Kennedy, W. (STATION WORKS, WARWICK-ROAD, WEST DRAYTON, MIDDLESEX). **Stand No. 52, Row C.**

Bar Bending Machines.—On this stand is shown a series of bar-bending machines for cold-bending tubes or rods of various sections. A special feature is made of the No. 2 machine, designed for bending bars up to 1 in. in diameter, and particularly suitable for reinforcement for concrete.

Latham, James Ltd. (124, CURTAIN-ROAD, LONDON, E.C.2). **Stand No. 149, Row G; Stand No. 158, Row H.**

Timber.—Messrs. James Latham, Ltd., show examples from each of their principal departments. The Hardwood Department has a magnificent pile of Austrian and Volhynian wainscot oak, as well as plain and figured teak, walnut and mahogany, &c., one log of mahogany being over 60 ins. wide. The Moulding Department exhibit specimens of shopfitters' and joiners' mouldings, as well as hardwood floorings and matchings. Plywood of every description for panelling, as well as high-class veneers are shown in great variety, and as usual many samples from high-class stocks of figured hardwoods are shown in the rough—manufactured into panels.

Leckhampton Quarries Co., Ltd. (SANDY-LANE, CHARLTON KINGS, NEAR CHELTENHAM). **Stand No. 32, Row C.**

Stone and Slate.—This stand takes the form of a small pavilion built of Cotswold stone and roofed with Eyeford slates with Cotswold stone ridging. The floor of the stand has been paved with slabs of indurated "Trigonia" (a new artificial stone), and there is also a display of limestone of all grades.

Liner Concrete Machinery Co., (NEWCASTLE-ON-TYNE). **Stand No. 283, Row P.**

Concrete Machinery.—A number of concrete machines are demonstrated, including the "A" Type No. 1 slab-making machine, complete with a patent elevator bogie, capable of elevating the required load to 4 ft. 6 in.

The Liverpool Adhesive Paste Co., Ltd. Stand No. 302, Row R.

Paste.—At this stand is shown a complete range of the L.A.P. products for decorators.

Major & Co., Ltd. (LONDON, S.E. 1). **Stand No. 110, Row F.**

Wood Preservative.—Messrs. Major & Co., Ltd., manufacturers of "Solignum" wood preservative, are exhibiting a two-room wooden building and fencing, illustrating the uses of their preparation as a preservative, as well as a decorative agent for external woodwork, and as a decorative stain for interiors.

Mechanical Engineering Co. (Manchester), Ltd. Stand No. 81, Row D.

Woodworking Machinery.—This firm is exhibiting the following woodworking machines: 32 in. roller feed saw bench; "Diploma" spindle moulder; power mortising machine; 18 in. pedestal saw bench; 12 in. bench planer; 26 in. "Reliant" saw bench; 30 in. band saw; hand mortiser; 30 in. ball-bearing saw bench; 24 in. × 9 in. panel planing and thicknessing machine; combined 20 in. × 9 in. under and over machine; 30 in. pendulum cross-cut; and a spindle moulder, with 30 in. tables.

Naylor Brothers (London), Ltd. (SLOUGH, BUCKS). **Stand No. 166, Row H.**

Paint.—This stand shows four rooms, the walls, doors and woodwork showing the finish which is obtained with the products. Other specimens of materials and work are shown. The pillars on the stand are finished with "Petrumite" imitation stone paint; the drawing room and bedroom in distemper with a stencilled frieze; the dining-room has oak panels finished with encaustic copal varnish, giving a flat finish; the bathroom is papered and the paper varnished with "Suwidec" varnish; the doors and woodwork in the various rooms are finished with "Suwena" enamel, "S.E.G." paint, and "One Coat Oak" and "Suwidec" varnishes.

Nettlefold & Sons, Ltd. (54, HIGH HOLBORN, W.C.1). **Stand No. 111, Row F.**

Ironmongery.—Messrs. Nettlefold & Sons, Ltd., exhibit, in addition to a wide range of locks, hinges, and door furniture, a number of patterns specially suitable for housing schemes and several new lines in door and window fittings. In the lock section is shown a new automatic lavatory lock; an electric lift lock, any part of which can be taken out and replaced in a few seconds without removing the case of the lock; and a reversible 4-way rim lock with a double spring live bolt action. A mounted model demonstrates how an ordinary night latch can be forced with a gimlet inside three minutes. A self-locking casement stay, together with the "Bardsley" oil door check and spring form a feature of the exhibit.

Odling, Anselm, & Sons, Ltd. (CROWN WHARF, LONDON, N.1). **Stand No. 107, Row F.**

Marble and Granite.—This firm exhibits a variety of coloured marbles and onyx, suitable for wall linings, pavings, columns, caps, bases, pilasters, and balusters, &c. Also several sculptured works of art, including a green crocodile that has been specially selected from the point of view of the markings being an excellent reproduction of the actual reptile. In addition, they exhibit two white marble Polar bears and many other things of interest in connection with interior decoration.

Oliver, William, & Sons, Ltd. (126, BUNHILL-ROW, E.C. 1). **Stand Nos. 3 & 4, Row A, Stand No. 6, Row B.**

Timber.—Messrs. William Oliver & Sons, Ltd., show samples of Cuba and Spanish mahogany; Austrian wainscot oak; English wainscot oak; samples of English walnut; Honduras and African mahogany, teak, American oak, and walnut; and hardwoods.

Pantin, W. & C. (147, UPPER THAMES-STREET, LONDON, E.C.4). **Stand No. 321, Row S.**

Elevator.—A portable belt elevator, suitable for loading trucks and lorries with builders' material, sand, gravel, breeze, &c., at a rate of about 30 tons per hour, is shown on this stand. It has a maximum delivery height of 10 ft., and is driven by an electric motor mounted in the base frame. This elevator will work in conjunction with a horizontal troughed belt conveyor. A few lengths of the "Mathews" gravity roller conveyor, suitable for handling bricks, tiles, timber, sacks, boxes, &c.; a "Hanchett" portable combination woodworker, made up of a universal saw, a planer and a drum sander; "Hanchett" hand and gang saw swage; "Hanchett" band swage shaper, and the "Mershon" pressure side dresser are also exhibited.

Parker, Frederick (CATHERINE-STREET, LEICESTER). **Stand No. 167, Row H.**

Machinery.—This firm demonstrates a concrete and tarmacadam mixer of 7 cub. ft. capacity per batch, complete with automatic loading and measuring hopper, combined with a power unit for driving, with regulating water tank, the whole mounted on steel under-frame with transverse axles. A wide range of plant is exhibited, including the "Monarch" solid body type stone breaker, size 12 in. by 7 in., for giving an output of 5–7 tons per hour, complete with screen for working in conjunction, the latter being carried by extended girders from the sides of the crusher, the whole mounted on road wheels as one self-contained unit. A further exhibit is a small size concrete mixer with a capacity of 4 cub. ft. per batch, and capable of dealing with an output of 40–50 batches per hour of mixed material; a 12 in. by 7 in. "Monarch" light stone breaker, suitable for dealing with material of equivalent hardness to blue bricks and for giving an output of approximately five tons per hour is also shown.

Patent Tip-up Bath Co. (39, BROAD-STREET, BIRMINGHAM). **Stand No. 230, Row L.**

Baths.—A bath specially designed for use where space is limited is shown on this stand. The water heater is fixed on the wall, so that when the bath is tipped up on end when not in use the heater is enclosed within it.

Rawlplug Co., Ltd. (GLOUCESTER HOUSE, CROMWELL ROAD, LONDON, S.W.7). **Stand No. 57, Row D.**

Rawlplugs.—This firm is showing on their stand Rawlplugs, Rawlplug aluminium fittings, Recess screws, and Rawlplug tool outfits. Throughout the day demonstrations in the use of Rawlplugs and Recess screws will be given. The great point which they wish to emphasise in connection with all items which they manufacture or market is the fact that they are labour saving. Recess screws can be driven home without the use of a gimlet, and in about one-third of the time taken to drive an ordinary lot headed screw.
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Roanoid, Ltd. (29, WEST GEORGE-STREET, GLASGOW). **Stand No. 70, Row D.**

Fittings.—Messrs. Roanoid, Ltd., show a range of manufactures in the new material "Roanoid," a composition manufactured into

suitable fittings for domestic use, such as door-handles, finger-plates, escutcheons, switch covers and plates, bell-push covers and plates, drawer pulls, sash lifts, sash knobs, slip bolts, indicating bolts, moulding hooks, wardrobe hooks, curtain rods and brackets and stair rods and eyes.

Rippers, Ltd. (CASTLE HEDINGHAM, ESSEX). **Stand No. 90, Row E.**

Joinery.—At this stand are shown: (*a*) High-class joinery section: Examples of oak, mahogany, and walnut doors, examples of their patent hospital doors, and examples of decorated mantels and mouldings. (*b*) Housing joinery section: standard doors, standard windows, standard dressers, standard cupboards, standard entrance gates.

Sagar, J., & Co., Ltd. (HALIFAX). **Stand No. 1, Row A.**

Woodworking Machines.—Messrs. Sagar & Co., Ltd., show the following from their well-known series of woodworking machines: The "Premier" combined hand and roller-feed planing and thicknessing machine (electrically-driven), for planing out-of-twist, making glue jointa, bevelling and chamfering, rebating, tonguing, grooving, moulding, &c.; a band sawing machine (electrically-driven), for sawing straight or curved work; a semi-automatic chain-cutter and hollow chisel mortising and boring machine (electrically-driven), for general mortising in hard or soft woods; a vertical spindle moulding and shaping machine with tenoning attachment, for moulding and shaping straight or irregular outlines; a builders' tenoning machine (electrically-driven), which is also a convenient machine for cross-cutting and grooving; a radial arm roller-feed circular saw bench for ripping and deep-cutting deals, flitches, &c., into boards by roller feed and for general sawing by hand feed; a four-cutter moulding and planing machine, which will take timber up to 7 in. wide by 3 in. thick; a heavy double-geared roller-feed planing and thicknessing machine for planing and thicknessing, framing, panels, boards, heavy timber, &c., at high speed; a double-spindle canting table dimension sawing machine (electrically-driven); a hand-planing, jointing, moulding, &c., machine, for planing out-of-twist, surfacing straight or taper, squaring up, moulding, and many other operations; and a heavy double-spindle moulding, shaping, trenching and recessing machine, suitable for almost every kind of moulding or recessing work such as working outside or inside edges of straight, circular or irregular mouldings, chamfering, grooving, cutting housings in string boards for stairs, and all kinds of tracery work, &c.

Siegwart Fireproof Floor Company, Ltd (231, STRAND, W.C.2). **Stand No. 92, Row E.**

Floors.—The "Siegwart" fireproof floor is shown constructed with a series of pre-cast hollow concrete beams and delivered on the job ready matured. The beams are placed in position and the joints between grouted with cement and sand. The floor can be designed to carry any load required on considerable spans, and, owing to its rigidity and sound-resisting qualities, is suited for factory, flat and office buildings.

Silicate Paint Co. (CHARLTON, LONDON, S.E. 7). **Stand No. 100, Row E.**

Paint.—The interior of this stand is divided into three compartments. In the gallery front is shown in panels a selection of the many "Duresco" colours now being made by the Company. In the rear are two specimen rooms, the ceiling and corner of one in white Duresco, on the frieze of which is painted in Duresco a floral design, the walls being cream Duresco. The ceiling cornice and frieze of the other room are done in white Duresco, the walls oriental blue Duresco. For the woodwork throughout the Company's flat oil paint "Silpaco" is used. The exterior of the stand is treated with mauve grey Duresco, the woodwork and signwriting, &c., in "Silpaco."

Smyrk & Son (49, RED LION-STREET, HOLBORN, W.C.1). **Stand No. 285, Row P.**

Fittings.—This stand exhibits patent picture rails and hooks, known as the "H. S. N.," the object of which is to abolish the dust-collecting groove of the ordinary picture rail and provide self-locking hooks underneath.

Spedol Manufacturing Co., Ltd. (BRENTFORD). **Stand No. 263, Row O.**

Paints.—The design of this stand has been entirely carried out by a decorator customer of the firm, and the specimens of work shown thereon have been executed under every day working conditions. Each side of the stand is executed with a different "Spedol" product, to demonstrate the class of work that can be done with these materials. Particular attention is directed to the "Stempeau" and "Spemac" panels, as examples of craftsmanship in distemper and enamel work. One side of this stand is designed to represent the back of a house where the uses of "Ferroarmor," the rust-resisting paint, are demonstrated. Amongst other of the Company's products exhibited are "Stempeau" distemper and ceiling white, "Spemac" enamel, "Spedol" varnishes, genuine ready mixed white lead paint, colours ground in oil and dry colours, "Swift" liquid driers, and "Spedol" brushes.

Standard Concrete Machine, Co., Ltd. (SOUTHAMPTON HOUSE, W.C.1). **Stand No. 316, Row S.**

Machinery.—The main exhibit of this firm is their "Standard" concrete machine. It differs from the ordinary run of concrete machines in that it will turn out a variety of products of all shapes and sizes, and has a range comprising most products required in the building, public works, and even garden ornament trades. One of its great points is its simplicity, changing over so readily from one type of mould box to another. The unique action of the "Standard" machine lies in the fact that the mould box is withdrawn from the product and not the product from the mould box. The machine is shown at work turning out a small variety of widely differing products of general utility. A power-driven mixer is also shown.

Stephens & Carter, Ltd. (PADDINGTON GREEN, W.2). **Stand No. 242, Row N.**

Ladders.—This firm has on view a complete range of ladders, barrows, steps, trestles, extension ladders, and other types of building plant, of which they are the manufacturers. They also show a large range of other building plant, such as sieves, screens, rubbish baskets, dust sheets, drain rods, tarpaulins, fall ropes, scaffold ropes, both wire and hemp, and a full-size model of Carter's (Spencer's patent) travelling cradle. This cradle, by means of its special overhead gear, can travel an unlimited length along the front of a building, and if necessary can follow projections, or recesses with equal facility. The firm also have on view a new and improved form of tubular steel scaffolding.

Sturtevant Engineering Co., Ltd. (147, QUEEN VICTORIA-STREET, LONDON, E.C.4). **Stand No. 123, Row F.**

Machinery.—The Sturtevant exhibit includes their powerful vacuum cleaning apparatus suitable for large and medium-sized public and private buildings. The necessary suction in all Sturtevant apparatus is created by an air turbine or multi-stage fan, a type of exhauster adopted by this company in preference to any other, although they are themselves manufacturers on a large scale of rotary positive exhausters, as well as fans of all sizes and types. The latest design of Sturtevant No. 8 Type Turbine cleaning plant, consisting of turbo-exhauster driven by a direct coupled 5 b.h.p. electric motor. A Sturtevant No. 10 Type turbo-exhauster of the latest design is shown, but is not connected to the power supply. Also a powerful portable machine, the Sturtevant No. 5 Type Turbine cleaner, consisting of filter, turbo-exhauster, and direct connected ½ b.h.p. electric motor combined into one unit and mounted on wheels.

Sussex Brick & Estates Co., Ltd. (14, MARKET-SQUARE, HORSHAM). **Stand No. 193, Row J.**

Bricks.—The exhibit of Messrs. The Sussex Brick Co. takes the form of a brick pavilion, on which they show their various Weald clay products, chief amongst which are Southwater vitrified engineering or pressed facings, and S.B.E.C. hand-made flared reds and mixed coloured kiln stocks.

Tann, John, Ltd. (117, NEWGATE-STREET, E.C.1). **Stand 47, Row C.**

Safes.—On this stand are exhibited all classes of fire and burglar-resisting strongrooms, strongroom doors and safes, including the most modern types, constructed to resist the oxy-acetylene blowpipe, high explosives, and other appliances of the scientific burglar. Also "Anchor Reliance" strong-room doors for bullion rooms and plate rooms, and strong-room doors for deed and book rooms, party wall doors to L.C.C. and Fire Offices Committee's requirements, steel plate closet doors, strong-room shelving, fittings and ventilators, safe deposits and fittings. The "Anchor Reliance" fire, burglar, and drill-resisting bankers' doors, incorporating John Tann's patent anti-explosive and anti-blowpipe devices, complete with steel vestibules, ventilating grilles, &c., are shown, together with fire and burglar-resisting anti-blowpipe bullion vault doors. Also crane-hinged water-tight anti-blowpipe treasury doors, of construction certified against all methods of attack. The "Anchor Reliance" 12-corner bent steel "Household" and "Commercial" deed and book safes are prominent, together with their 12-corner bent steel "Security," "Stronghold" and "List K" fire and thief resisting cash, plate, and jewel safes. The "Anchor Reliance" 12-corner bent steel "Dreadnought" quality bankers' safes, fitted with patent anti-blowpipe and anti-explosive devices, will be on exhibition, together with their "Grade 2" anti-blowpipe safes and "Composite" safes, of tested resistance against every known risk.

Ten Test Fibre Co. (TELEPHONE-AVENUE, BRISTOL), **Stand No. 87, Row E.**

"Ten-Test," which is exhibited on this stand, is a permanent material for casing interior walls and partitions, and exterior walls and roofs. It can also be used for constructing hoardings, signs, and for temporary buildings such as garages and pavilions. It consists of selected wood fibre from which all the resin, oils and other perishable matter has been extracted by boiling. It is interesting to note the varied uses to which "Ten-Test" has been put in the British Empire Exhibition. For showstands it has been used extensively, and also in ceilings and walls of offices and main buildings. Outside, it has been used in the construction of kiosks, a demonstration bungalow, some half-timbered fifteenth century style work, and for casing the two remarkable 100 ft. steel towers and dome of an advertising exhibit. The renderings used on "Ten-Test" for these and other works at Wembley are demonstrated in the Exhibition.

Thames Board Mills, Ltd. (PURFLEET, ESSEX). **Stand No. 150, Row G.**

Wallboard.—As in past years, this firm (formerly the Thames Paper Co., Ltd.), are showing "SX" board for interior lining. A specially designed exhibit to show the practical advantages of this material occupies the same position as in 1922. Various methods of panelling and decoration will be shown, and the ease of fixing, rigidity, and economy advantages of "SX" board are demonstrated. Particular attention is drawn to the use of "SX" board for ceilings.

Triangular Construction Co., Ltd. (IMBER COURT, EAST MOLESEY, SURREY). **Stand No. 35, Row C.**

Machinery.—This firm are demonstrating the advantages of the triangular system of construction, wherein walls are formed with an impervious exterior face, and a porous interior face, with perfect bonding, continuous vertical cavities, &c. They also exhibit the "Trianco" dual pressure double toggle block and slab machine, which, in addition to producing up to 800 slabs per day under heavy pressure with hand power, also effects economy in cement. The "Trianco" tile machine for producing perfect roofing tiles of the standard type, in concrete, with hand power, is another exhibit; and finally they are showing models of the houses erected on the Imber Court Estate, and plans of same.

Triplex Foundry, Ltd. (GREAT BRIDGE, STAFFS). **Stand No. 10, Row B.**

Ironfounders.—The "Triplex" is exhibited at work. A most important feature of all Triplex grates is that the whole of the ovens and flues are built of cast-iron plates in sections. This will not rust out, and reduces upkeep to a minimum; the ovens take a little longer to heat up from cold, but retain their heat hours after a sheet iron one has gone cold. The saving in fuel, it is claimed, over an extravagant and useless kitchen range is enormous. 34 lbs. per working day, composed of small coal with about one-third slack, is sufficient to do all the work of the household for cooking and heating water. If their Triplex grate is watched at work no smoke at all can be seen if the fire is stoked to printed instructions. Smoke is heat-producing power which is all consumed in a Triplex and turned to good use. Owing to the fire being near the hearth, all dust that is not drawn through the flues drops into the ash grating below the fire.

Tuke & Bell (27, LINCOLN'S INN FIELDS, LONDON, W.C.2). **Stand No. 65, Row D.**

Sewage Installation.—Messrs. Tuke & Bell exhibit a country house sewage installation, comprising:—Patent semi-septic tank, with its fittings and covers; also aerobic filter with specially designed distributing apparatus to reduce the amount of attention necessary to the minimum, and a final humus pit. The installation is capable of dealing with the sewage from an eight-person house. Also a patent "Ideal" revolving sewage distributor, operated by automatic tippers, and a central container instead of the usual dosing syphon. This machine has serrated edged arms, and there are no small holes to choke. Attention, again, is reduced to the minimum, and this pattern of revolving distributor, which is in use in all parts of the country, has proved very satisfactory for large country houses, and for sewage schemes at public institutions and factories.

Turner Bros. Asbestos Co., Ltd. (ROCHDALE). **Stand No. 160, Row H.**

Asbestos Roofing.—Messrs. Turner Bros. Asbestos Co., Ltd., have a steel structure to show their asbestos-cement "Trafford" tiles and "Endurol" tiles, the former being fixed on the roof to purlins at 3 ft. 6 in. centres, and the latter to purlins at 20 in. centres. These tiles are made in grey, red and russet brown. It is of interest to note that "Trafford" tiles were adopted for the British Empire Exhibition at Wembley, and have been used throughout on all the principal buildings, 1,500,000 sq. ft. of roofing being used. This firm also exhibit its "Ægis" asbestos cement slates and flat sheets, as well as veneered asbestos cement plywood panels.

Ure, Allan & Co. (SPRINGBANK IRONWORKS, KEPPOCHHILL, GLASGOW). **Stand No. 33, Row C.**

Heating.—It is claimed that the "Ure Back-to-Back" Grate, which is exhibited on the stand of Messrs. Allan Ure & Co., successfully meets modern requirements by making the living-room into an attractive parlour or sitting-room. The oven being in the scullery radiates the heat, thereby making the apartment comfortable and also permits of clothes being dried rapidly. The grate is simple in construction and easily cleaned, there being no flues above the hot-plate. Its advantages are threefold as the living-room fire heats the hot-water service, cooks a 14 to 20 lb. joint in oven, and boils or stews on the hot-plate at the same time. A plentiful supply of hot-water is guaranteed, and as a gas grill and boiling ring can be fixed on hot-plate, and a gas fitting into oven, converting it into a gas cooker, it is convenient for use in summer time. It is, it is claimed, the most widely adopted combination of its kind, and is being used in municipal and other housing schemes throughout the country. It has been supplied to the London County Council, Manchester, Glasgow, and other Corporations. Explanatory and illustrated list will be sent post free by the patentees and sole makers, Messrs. Allan Ure & Co.

Victor, J. A. (77A, QUEEN VICTORIA STREET, LONDON, E.C.4). **Stand No. 206, Row K.**

Woodworking Machinery.—Mr. J. A. Victor, sole British representative for the Ateliers de Construction, Ch. Danckaert, of Brussels, shows a display of their woodworking machinery, including a six-cutter planing and moulding machine; a six-cylinder band re-sawing machine; and a set of machines for joinery manufacturers.

Wadkin & Co. (NORTH EVINGTON, LEICESTER). **Stand No. 202, Row K.**

Woodworking Machines.—Messrs. Wadkin & Co.'s exhibit consists of a selection of their high-speed woodworking machines, all of which are fitted with improvements for giving high and continuous output. A number of machines are shown in operation. These include a 20 in. combined surfacing and thicknessing machine, a new heavy model for surfacing, planing out-of-wind, bevelling, trying-up, rebating and chamfering, stop chamfering, tonguing and grooving, moulding, jointing, &c., the feed gears totally enclosed running in oil, safety circular cutter-block arranged for mould.ng, spindles running in ball bearings; a 12 in. hand-feed surfacing machine, for surfacing, planing out-of-wind, edging, rebating, chamfering, tonguing and grooving, moulding, jointing, &c., safety circular cutter-block, spindles mounted in ball bearings; a 32 in. circular saw bench, special design to meet the latest Home Office regulations; a 20 in. saw bench, provided with rising and falling table mounted on heavy circular slide, spindles running in ball bearings; a 30 in. band sawing machine, provided with guards for top and bottom wheels, spindles mounted in ball bearings: a heavy vertical spindle moulding machine, latest model fitted with heavy ball bearings to spindle, suitable for all kinds of straight or irregular shaping, with tenoning attachment capable of dealing with all kinds of tenoning; a combined chain and chisel mortising machine, fitted with ball bearings to every running spindle, and both chain and chisel automatically stop immediately the tools are raised from the mortise; a chain mortising machine with hollow chisel attachment, specially built for builders and joinery manufacturers; a tenoning machine, entirely new model, containing many special features, all spindles mounted on ball bearings; a high-speed boring and recessing machine for cutting string boards for stairs, boring, recessing and routing light work, the table has horizontal, lateral and vertical adjustments; and a 14 in. belt sandpapering machine for flat or irregular sanding.

Walpamur Co., Ltd. (DARWEN, LANCS). **Stand No. 133, Row G.**

Paint.—The inside of this stand is divided into three rooms, each representing a portion of a decorative scheme for a different type of interior.

Waygood-Otis, Ltd. (54 & 55, FETTER-LANE, LONDON, E.C.4). **Stand No. 121, Row F.**

Lifts.—On this stand is exhibited special high speed gearless traction lift machine, fitted with patent micro drive self-levelling apparatus. This machinery gives smooth running and the greatest ease in handling when running at high speed. Owing to the absence of any reduction gear the machine is arranged so that the car will stop level at any floor of a building when running with any load and at any speed up to 800 ft. per minute. A model of the latest pattern escalator for conveying a large number of passengers in a continuous flow, similar to those which are being built in their works and erected by them for the London Underground Railway Co.; one standard electric lift machine arranged for continuous current, with latest pattern controller for operating same; one class "F" hand lift operated by endless hauling rope, and one class "FH" hand lift suitable for use in private residences, worked by handle and winding gear from below with automatic foot brake, giving easy control and quiet running, are also shown.

The Welin Trading Co., Ltd. (5, LLOYD'S-AVENUE, LONDON, E.C.3). **Stand No. 275, Row P.**

Decoration.—The Welin Trading Company shows a pavilion displaying the forms of interior decoration that can be obtained purely by the use of their Glasurit japans, varnishes and enamels. A feature of this exhibit is the fact that with the exception of a few special panels the whole is an example of the excellent effect that can be obtained, not by special methods of application in special drying rooms, &c., but by the ordinary methods of a first-class firm of decorators. Even the special panels themselves, whilst produced at the works under ideal conditions, yet have received only the minimum number of coats. In addition there are shown various panels illustrating the actual stages in the production of the special panels referred to. A complete range of Glasurit products is shown and in addition Neutralac, Iron Glasurit, and a complete range of samples of Glasurit varnishes.

Well Fire & Foundry Co., Ltd. (LONDON, W. 1). **Stand No. 224, Row L.**

Heating.—This stand is built of oak, walnut, mahogany and whitewood panelling, carried out in period styles. Seven complete fireplaces are exhibited, each being a type of its own and possessing features many of which are new to the fireplace industry. A new idea is shown in "The Well Fire," made in canopied dog-grate form. It retains all the essential principles of the "Bowes" patent, and is especially recommended for smoky chimneys. Rustless armour-bright iron fireplaces have become a speciality of this firm, and some interesting specimens are on view. An example of a hobbed fireplace composed of old English sand-faced "Tattershall" pressed briquettes of various colours are exhibited, as also are other fireplaces in stone, marble, faience, &c.

Woco Door Company (DASHWOOD HOUSE, LONDON, E.C.2). **Stand 305, Row R.**

Doors.—Messrs. The Woco Door Co. exhibit on their stand examples of Woco doors. These doors are manufactured from Columbian pine seasoned by a special process, which ensures their durability and prevents warping, twisting or shrinking, while the 3-ply panels used are manufactured of rotary cut veneers from Columbian pine selected logs, prepared with a special damp-proof cement. Woco doors take an ordinary oil stain and wax compound so readily and inexpensively that they have been proved less expensive, it is claimed, than any other door that requires to be painted. Woco doors are all carefully machine-sanded prior to delivery, and are ready for staining and waxing. The Company carry a regular stock of some 15,000 doors in London and the same quantity in Liverpool, so that prompt deliveries can be made.

White, Thomas & Sons, Ltd. (LAIGHPARK, PAISLEY). **Stand No. 85, Row E.**

Machinery.—Messrs. Thomas White & Sons, Ltd., have a large variety of machines on view, including one of their 9 in. by 4 in. planing, moulding and matching machines with a special arrangement of heads, but the machine at Olympia will be arranged with heads in the ordinary British way as against the Continental style, and will have an extra top head and beading head. The advance which has been made in high-speed planing is very much evidenced by a close inspection of the machine. Everything is built on a solid British pattern, made to last, and the conveniences of the machine are such that all adjustments can be made from the front and the setting-up time of the machine is reduced to a minimum. In addition to these conveniences there is embodied in this design the White patent loose spindle which enables a cutter-block to be removed from the machine at the expense of only one or two minutes' labour and without the necessity of removing the ball or other bearing. The 9-speed gear box with which these machines are fitted should also be seen. This gear box is quite capable of dealing with feeds up to 125 ft. per minute, even though the timber be wet. In addition to this planer, Messrs. White will show their straight line edger which is intended to supersede the push bench.

The Yorkshire Copper Works, Ltd. (LEEDS). **Stand No. 293, Row Q.**

Copper.—Messrs. The Yorkshire Copper Works Ltd., make a special display of light gauge tubing for use in connection with patent fittings for housing work and pipe work of every description. The patent fittings used enable specially thin gauge tubes to be installed with a resulting decrease in cost, and at to-day's prices copper tubes are much cheaper than lead. It is, they claim, rapidly becoming the practice of architects and other authorities to specify copper tubing for domestic work. It is, they maintain, ideal for hot water supply. When used in conjunction with patent fittings the necessity for screwing is obviated and the cost of the installation when light gauge copper tubing is used is cheaper than in lead. By using copper (1) All pipes can be laid in sight; (2) A constant clean water supply is obtained—no contamination of water or diminishing supply owing to rust troubles; (3) A sound efficient installation is ensured, the life of the installation being two or three times that of similar work carried out in other materials; (4) No burst pipes. Tubes tested to 1,000 lbs. internal hydraulic pressure.

In our last issue, owing to a typographical error, a slight mistake was made in our reference to Messrs. G. Farmiloe & Sons, Ltd., Stand No. 66, Row D, at the Building Exhibition, with regard to their speciality for repairing slate and lead roofs. The word we gave was "Mermetex"—this should, of course, have been "Hermetex."

Ventilation.

In this little book* the principles of the system known as natural ventilation have been placed before the reader in the striking form of a series of quotations from the public pronouncements of a great many famous persons.

Scientists, medical men, architects, journalists, and others have been found who not only give strong support to the natural system of ventilation but express it in language of uncompromising plainness and vigour. The style of composition, though dramatic, is well managed and there is no escaping the point that a system, of ventilation designed in accordance with natural laws is likely to be efficient. The information conveyed is rather more likely to stay in the reader's memory than if it had been put forth with all the grim solemnity of the usual scientific treatise. Anyone called upon to design the ventilating scheme for a public building should certainly make a point of reading the book.

* "The Ventilation of Public Buildings." By Robert Boyle. (London: Robert Boyle & Son). 1923. Price 6s. net.

THE WEEK IN PARLIAMENT

Lead Poisoning.

Mr. Henderson, the Home Secretary, has introduced a Bill to make better provision for the protection against lead poisoning of persons employed in painting buildings.

Numbers of Employees.

Mr. Greenwood, in reply to Mr. Simon, said that the question as to how many men in each section of the building trade were estimated to be required to build 200,000 A3 houses per annum, had been considered by the Committee of Representatives of the Building Industry, and the Minister of Health hoped shortly to be able to make a statement.

The Subsidy.

Mr. D. G. Somerville asked the Minister of Health in how many cases the subsidy under the Housing Act of 1923 had been refused, firstly, to requests by local authorities in respect of their own buildings and, secondly, to applications from private builders put forward through those local authorities?

Mr. Greenwood said that so far as local authorities' schemes for building houses themselves were concerned it had been found necessary in a number of cases, in view of the amount of work in hand or the lack of essential skilled labour in the locality, to limit immediate approvals to an instalment of the proposals, the principle being to get houses actually built and occupied as quickly as possible. In the case of private enterprise individual applications for subsidy were dealt with by the local authorities and when the Minister had approved a general scheme he did not receive details of the approvals or disapprovals in particular cases. On March 1 local authorities had issued certificates of approval under the scheme covering 41,060 houses.

Mr. Somerville protested against being "put off with generalities," and asked for more definite information, but no further reply was forthcoming.

The Leasehold System.

Mr. Wheatley informed Mr. Gould that so far as he was aware the leasehold system had not added materially to the problem of the housing of the working classes, and he did not think it would be practicable to deal with this question in the forthcoming Housing Act.

Houses Built in London.

Mr. Greenwood informed Mr. Gilbert that during 1921, 1922 and 1923 the numbers of working class houses erected by private enterprise with State assistance were 1,027 in the County of London, and 6,630 in Greater London (including the County). Statistics were not available showing the numbers erected during this period without State aid, but during the year ended September 30 last the number of houses erected by private enterprise of a rateable value not exceeding £35, were, in the County of London, 994, and in Greater London 6,794.

Surface Transport.

Mr. D. G. Somerville asked the Minister of Transport whether, in view of current problems, he would consider the desirability of instituting an inquiry into the advantages or disadvantages of different forms of surface transport in the urban and semi-urban areas?

Mr. Gosling said that problems of the nature suggested in the question were under constant review in his Department. He saw no sufficient reason, however, for instituting a special inquiry into these particular points at present.

The Rent Bill.

When the debate was resumed on Monday, the Government asked the House to allow Clause 1 to remain in the Bill, on condition that an amendment was moved in Committee to provide that no order should be made for the eviction of an unemployed tenant unless the Court was satisfied that there had been a reasonable time in which the tenant could apply for relief to the local authority, and for such authority to consider such application. Any question of recouping the local authorities out of the National Exchequer or of placing the burden on the landlord was not to be proceeded with. Many members, however, pointed out that the new proposal would involve no alteration in the law, as the judge already had to take all the circumstances into consideration, and that the final decision was still left in his discretion. They pressed the Government to drop Clause 1 altogether and to proceed with the rest of the Bill, which could be passed without difficulty. The Government, however, remained adamant, and clung to the whole Bill, stating that amendments could be moved in Committee. Amid much excitement, the second reading was rejected by 221 to 212—an adverse majority of nine. As, however, the Government did not make the question one of confidence, they have not resigned, and an "agreed" Bill dealing with evictions will probably be introduced.

Later in the evening, following the Government defeat, Mr. E. D. Simon's Preventions of Evictions Bill was read a second time, and on Tuesday the Prime Minister announced that the Government would not introduce another new Bill, but would endeavour, in Committee, to amend Mr. Simon's Bill, which, in its present form, was "altogether unsatisfactory." It is understood that Mr. Simon's Bill incorporates the second clause of the "dead" Government Bill, which dealt with evictions under last year's Act.

Housing Survey.

Mr. Wheatley informed Sir W. de Frece that the question of a survey showing numbers of new houses needed was under consideration.

The Wembley Exhibition.

Answering Mr. Purcell, who asked if any approach had been made to the trade unions in the building industry who had members employed at the British Empire Exhibition to relax their rules regulating overtime, in order to assist in overcoming any delay in opening the exhibition, Mr. Thomas, Colonial Secretary, replied: "Yes, Sir, and I have been assured that everything will be done in the direction requested.

World's Largest Floating Dock.

The largest floating dock in the world, of 60,000 tons displacement, built by Messrs. Armstrong, Whitworth & Co., to accommodate large liners at Southampton, will leave the Tyne for Southampton on April 14.

Building Trainees.

Mr. Walter Betts, the General Secretary of the Trainees' National Guild, stated recently that a meeting may shortly be called at which Ministers will be invited to explain the situation which has arisen over the question of the absorption of building trades trainees in Government schemes. Mr. G. Betts pointed out that Mr. Shaw, Minister of Labour, had stated that it was proposed to spend £2,700,000 this financial year on the training schemes, as against £2,250,000 spent last year, an increase of nearly half a million, but there could be no point in expanding the schemes unless efforts were made to absorb the men into industry when trained. Mr. Betts added further: "Mr. Shaw recently promised a deputation of the Guild that the question of the absorption of the building trades trainees on any Government scheme should have the careful consideration of both the Minister of Health and himself, and we are making strong representation to the Ministers concerned on the matter. This apparent neglect on the part of the Government to redeem its promise to the disabled is causing considerable feeling amongst the men concerned in all parts of the country.

THE BUILDING TRADE

THE SUPPLY OF OPERATIVES IN THE BUILDING INDUSTRY.—II

By T. P. BENNETT

3. *The Labour Required to Erect a Specified Building.*—The question of the adequacy of the operatives, as shown by the 1921 Census, is a matter for consideration in conjunction with the normal output of commercial buildings, plus the probable output of private houses and the proposed output of houses under the Government programme. Whether it is possible to make a reliable statement on this matter is perhaps open to doubt, but it may be possible, in conference with the employers and operatives, to ascertain an approximate figure which could be used as the basis for discussion. With this end in view I append a table furnished by Mr. H. R. Selley, the President of the National Federation of House Builders, which I am informed has already been given in evidence before a Government Committee :—

WAGES BASED ON 10,298 FEET CUBE (GOVERNMENT TYPE).

Per cent.	@ £ s. d.	Skilled hours.	Proportion of Operative per house based on a 44-hour week for 52 weeks per year.	Unskilled hours.
24 Bricklayer and Labourer	39 12 0	272	1/8th	272
27 Carpenter and Joiner	44 11 0	609	1/4th	—
14 Plasterer and Labourer	23 2 0	153	1/15th	153
8 Plumber and Mate	13 4 0	90	1/25th	90
9 Painter and Glazier	14 17 0	188	1/12th	—
3 Slater, Tiler and Labourer	4 19 0	33½	1/68th	33½
15 General Labourer, Excavator, &c.	24 15 0	—	1/6th	396
	£165 0 0		Approx. 3/4ths of an Operative per house per annum.	

[NOTE.—There are many items of actual wages, such as a general foreman, watchman, and unloading of materials which cannot be allocated to any particular trade. The general foreman has been distributed over all trades, but other work is included in General Labourers.

4. (*a*) *Conditions of Entry into the Building Trade.*—A general survey of the prospective supply of labour shows that in London there are more boys who wish to become building trade operatives (or apprentices) than there are employers willing to offer vacancies.

(*b*) *Restrictions upon the Number of Apprentices Engaged.*—The maximum number of apprentices is limited by the operatives to 1 in 7 with a maximum of 8 in any one shop, except in special cases, which are dealt with by the London Building Trades Apprenticeship Committee. In practice it is found that the majority of the building trade employers are taking less than the average of 1 in 7. A few interested employers are prepared to take considerably more than the maximum of 8 or than the 1 in 7 rule would allow. In these cases, the restriction comes into operation and as a result the difficulties are aggravated. In the provinces there are more employers willing to take apprentices than there are boys willing to be indentured, and it is probable that if the trade union rules were relaxed so that the willing employers were allowed to take the maximum number of apprentices and the indifferent employers were induced to take a due proportion of apprentices, there would be a shortage of boys willing to enter the industry. The principal reasons for the *dearth of suitable material* (*c*), are as follows :—

1. Past unemployment and insecurity of tenure.
2. Loss of time owing to wet weather.
3. The small increase of wages of skilled men over the wages of unskilled men.
4. The relatively high wages which can be obtained by unskilled boys in blind alley occupations.
5. Unemployment pay for persons under 21.
6. The supposed social inferiority of workers in manual trades.
7. The supposed greater opportunities of commercial life.
8. The tendency of elementary school head masters to encourage boys to enter clerical occupations with a view of indicating the high social standard of the school.

On the other hand, it must be noted that if, through the agency of the elementary schools or some other channel, boys were inclined to look with favour upon the occupations of various operatives in the building industry, the men already in the industry would exert a considerable amount of influence to retain control over the numbers entering. This arises from the fact that (i) they regard restriction of numbers as a direct asset in obtaining high wages ; (ii) they have been faced with substantial periods of unemployment, even in so recent a period as 1923, and in the face of the necessity of providing through their unions substantial, and even very large, sums for unemployment pay, they naturally do not see the need of largely augmenting the total number of operatives. There are many sidelights, reservations and reasons for the views held, and many erroneous impressions. These require extensive investigation and sympathetic consideration before due weight can be given to each and the view of the men adjusted to the broad economic conditions of the industry in which they are working.

5. *Methods of Training.* — Assuming the numbers to be ascertained, there are broadly speaking five possible methods of entry into the building industry. These are :—

1. Ordinary apprenticeship to a building trade employer.
2. Tuition in a trade school, plus indentures.
3. Over-age apprenticeship.
4. Promotion from labourers.
5. Dilution.

Up to the present the recognised means of entry into the building trades has been by means of apprenticeship. This method of entry has steadily declined for a long period, and there are special reasons why it is extremely difficult to revive it on a large scale at the present moment. Its advantages may be summed up as follows : It provides

(*a*) A definite period of training ;

(*b*) Continuity of employment ;

(*c*) Familiarity with working conditions of the industry at an early age ;

(*d*) Graded wages ;

(*e*) Capacity to earn wages from the time of leaving school.

The disadvantages are—

(*a*) In many cases the boy is not properly or systematically trained ;

(*b*) An employer cannot see his way to engage apprentices on a substantial scale ;

(*c*) The tuition is often of a most unsatisfactory character, and at best follows the empirical methods which have been in existence for many years ;

(*d*) There is no possible chance of raising the standard of skill in the industry ;

(*e*) Modern practice tends to confine the operative as well as the apprentice to a limited number of operations.

Apart from the serious obstacles in the way of reviving the apprenticeship scheme there are certain inherent objections to it, just as there have been recognised to be objections to the system of architectural pupilage. The two cases are in many respects parallel, and many of the advantages of the schools of architecture can be obtained in schools for the building trades. In many country districts, however, apprenticeship is the only method by which any kind of training can be provided, and apprenticeship will, therefore, remain a very important source and a very important method of training operatives, and of great value in so far as the actual number of boys with whom it deals is concerned.

It is necessary to undertake a serious and extensive campaign for convincing the commercially-minded employers that apprenticeship does not entail financial loss, but eventually means financial gain through increased efficiency and skill, and an increase in the number of operatives available. How far it is possible to revive apprenticeship on a big scale in country districts is perhaps open to doubt, but it is beyond question that some effort of this kind is necessary. Until such time as the total number of apprentices in the industry is proportionate to the total number of operatives, it is necessary that the restrictions upon the number of apprentices indentured to suitable firms should be removed, and that some relaxation of the rule of one in seven should be accepted. At present employers willing to do their utmost to train apprentices are seriously handicapped.

Training in Technical Schools.

Considerable advances have been made in large towns in connection with the training of apprentices in technical schools. Here boys are received for a whole-time day course between the ages of 13 and 14, and remain in the school for three years. During this period they follow a curriculum similar to that set out in appendix A, from which it will be seen that the course provides for the continuation of elementary school education in English subjects, with the addition of practical and scientific subjects relating to the building industry. It is found in practice that very great intellectual development takes place, and that the boys, in addition, acquire considerable skill in handling tools. The development of the intelligence of the boy is perhaps of even greater importance than the development of his vocational skill, and it is impossible to give too much importance to this aspect of the matter; In practice it is generally found that the standard of pure craft ability or, in other words, of wage earning capacity of a boy at the age of 16½, is superior to that of the boy who has spent a corresponding period in the workshops, and it may be justly claimed that at the age of 21 the product of a joint technical school and works apprenticeship is infinitely superior to the product of the works apprenticeship alone.

An objection sometimes raised against the school is the fact that between 13½ and 16½ parents are not able to maintain the boy without wages as well as pay a nominal fee for his tuition. In a few cases boys receive scholarships which assist in this matter. The careful and thrifty

parent is able to bear this expense, but it is to be feared that many parents are not prepared to face it, and therefore if school training is to be regarded as an important factor in recruiting labour for the building industry in large towns it will be necessary to take account of this factor.

Over-age apprenticeship has been proposed as a temporary means of providing additional operatives. This seems to be the soundest of all the proposals put forward as a temporary means of dealing with the admitted shortage of skilled labour. The prospective operative should be bound under some system of indenture which will give a minimum period of three years of training, which may be regarded as the shortest length of time in which a man can be trained in building crafts; of this period, at least two years should be spent in a trade school and tuition should not be entirely of a craft character. It should include such subjects as geometry, building construction, mathematics and English. By this means a man will have a sound theoretical foundation upon which to develop his practical skill, and will be able to extend that knowledge by attending evening classes. Obviously it will be necessary to consider some system of payment by grant, owing to the age at which a man would commence his indentures. The advantages of this school training will be as indicated in paragraphs 1 and 2 above.

Promotion from Labourers.

It is curious that no serious movement has been made in the past to provide a properly graded method of progress from the position of labourer to that of skilled craftsman. Such a movement would be in strict accord with the accepted democratic principles of our day and would provide a real incentive to the industrious and energetic man to rise. It is, of course, evident that such a possibility would of necessity mean a system of examinations or tests by craftsmen themselves setting up a standard of craftsmanship. This would have the advantage of raising the general level of skilled work in the building trade and would do much to restore the pride of craft which was so great an asset to the old guilds, the loss of which is everywhere deplored.

Dilution.

Dilution has been mooted as a temporary solution of the labour shortage, but dilution is a two-edged sword of the most dangerous character. It sets up a body of men who are at an admittedly low level in skill, who do not go into the trade with any real knowledge of its work or its problems, and who in many cases demand craftsmen's wages although they are inferior in value to an intelligent labourer.

Any scheme which brought a large number of such men into the trade would create widespread unrest and dissatisfaction and would do untold harm to everyone concerned. In the words of an architect: it would be necessary to write a C3 specification, to accept C3 work and to pay an abnormally high price for it. Dilution is useless, and the sooner it is forgotten the better.

The above may be summarised as follows:—

1. Before any proposals can be put forward for considering the personnel of the industry, accurate statistics must be obtained (*a*) of the number of operatives in the industry subdivided into trades; (*b*) the relative ages of the operatives; and (*c*) an actuarial calculation of the average working life of an operative.

2. An effort must be made to estimate the probable volume of buildings which will be executed within the next ten years, and from that ascertain the number of men who will probably be absorbed. This is admittedly an extremely difficult calculation.

3. The unemployment returns of the last few years must be examined and definite proposals put forward in a concrete form, which will show the men that the risk of unemployment has not increased, and that, so far as can be ascertained, they are not being rendered liable to undue risks.

4. The conditions of employment in the industry should be considered with a view to providing as much continuity of employment as possible, and to providing a wage which is commensurate with the standard of skill and length of training required. In particular, such obviously objectionable features as loss of time for wet weather should be removed. It has been stated that bricklayers, who have the greatest loss of time, face an average loss of 5 per cent. If this is so, I suggest that it is a loss which might be borne by the industry and not the men. Some such revision is undoubtedly necessary, in order that the number of apprentices required may automatically apply for entry.

5. Careful consideration must be given to the method by which the operative is to be trained after he has been secured. This, in my opinion, should normally consist of three alternatives:

(i) Apprenticeship;
(ii) School training, plus apprenticeship;
(iii) Promotion from labourers.

Appendix A.

THE TRADE SCHOOL OF BUILDING.

Junior School Time Table.

Subject.	Hours. 1A.	1B.	2A.	2B.	3A.	3B.
English	5½	5½	4	4½	2½	2½
Physics	2	2	–	1½	–	1
Maths.	4	4½	2½	2½	1½	2
Sports	1½	1½	1½	1½	1½	1½
Building Construction	4½	4½	3	4	2½	4
*Workshops	8	8	8½	10	11½	8
Art	3	3	6	4½	4	–
Geometry	2	1½	2	1½	1	1
Chemistry	2	2	2½	1½	3	1½
Science	–	–	–	–	–	–
Architectural Details	–	–	1½	–	3	–
F.S. Details	–	–	–	–	–	2
Carpenters' Art	–	–	–	–	–	3½
Plumbers' Art	–	–	–	–	–	1½
Sanitation	–	–	1	1	1	1
History of Crafts	–	–	–	–	1	1
Total Hours	32½	32½	32½	32½	32½	32½

* Taken in Joinery, Decorating and Plumbing alternatively for one term each.

SANITATION OF TWO THOUSAND YEARS AGO

Sir Banister Fletcher lectured at the Central School of Arts and Crafts, on February 27, on Roman works of public utility, aqueducts, bridges and tombs. The genius of the Romans for organisation was nowhere better demonstrated than in their provision for a good supply of water for the living, and in their regulations for the burial of the dead outside the city walls. An ample water supply was necessary for the Imperial City, and it was found in the hills not very far away. They set to work to pile up stone upon stone to form the great arches which carried the water in a covered "specus," free from contamination. It might be asked why they expended money and labour in carrying water at such a height instead of underground. The reply was that pipes had to be made of costly lead or bronze; they had not the lead, and bronze was very costly. It was thus cheaper by forced human labour to construct these great arches across valleys and rivers into Rome. The regulations for the water supply threw light upon Roman administrative methods, for officials were appointed by the Senate to secure the purity of the water. Judging from their careful provision of water for thermæ, fountains and houses, it would appear that, in those far-off days, cleanliness was next to godliness among the Romans. They also strove to secure the sanitation of the city by prohibiting burial within its walls, and thus it was that great monumental tombs of different types lined the roads that approached Rome and Pompeii, and even the great Mausoleum of Hadrian was on the other side of the Tiber.

SHRINKAGE OF SEASONED WOOD 3,000 YEARS AGO

THAT wood seasoned for 3,000 years should retain sufficient vitality to be capable of further shrinkage is very extraordinary, but none the less certain. Mr. Howard Carter, in his detailed account of the Tomb of Tut-ankh-Amen, at Luxor, has described several valuable particulars concerning which very few ordinary people possessed any knowledge whatever. His expert experience of first-aid methods adopted for the preservation of different classes of objects includes woodwork. This material, naturally, presented many problems, and, of course, damp and the white ant furnish the chief enemy. In unfavourable conditions, as might be expected, nothing remains but black dust or a shell, which crumbles at the touch. Luxor, however, is the most favourable site in Egypt, and in the present tomb most of the timber work remained solid and good. Unless woodwork is in the very last stage of decay its preservation is always possible by the application of melted paraffin wax. By its use even remnants can be made perfectly solid and fit to handle. At Tut-ankh-Amen's tomb the difficulties arose from the changes which subsequently happened in the condition of this sound stuff, owing to changes of atmosphere which caused the shrinkings. The Egyptians usually applied on wood a thin layer of gesso on which prepared surface they painted figures or applied an overlay of gold foil. When the ancient wood started to shrink the gesso began to loosen and buckle, becoming very liable to fall off and be lost. The angles chipped away, and to prevent this the surface was sprayed with a solution of celluloid in anylacetate to fix it. However, in about a month's time, the fissures expanded owing to change of temperature from the close humid atmosphere of the tomb to the dry airiness of the laboratory. The gesso not being virile was coming off, risking the loss of parts of the painted ornamentation. Drastic measures became urgent. Melted paraffin fortunately proved effective and penetrated the materials, holding everything firm, and instead of injuring the colours they became more brilliant than before. The wax had to be brought as near as possible to boiling point, otherwise it would chill and refuse to saturate. The wax, in cases of blister, was applied by a pipette. Whether the wood will shrink further remains to be seen.

MEN IN BUILDING TRADES

In a written reply to a question the Minister of Health gave the following figures of the numbers of men employed in the building trades in England and Wales:—

	Census 1901.	Census 1911.	Estimate for 1923.
Bricklayers	109,160	92,312	53,630
Carpenters & Joiners	243,075	176,978	106,880
Plasterers	27,144	21,230	13,910
Slaters	8,461	6,946	2,880
Others	445,904	444,390	454,700
Total	834,144	741,856	632,000

As will be seen, it shows a considerable decrease.

Obituary.

The death occurred recently of Mr. C. Burt, of Prestatyn. Mr. Burt was formerly a building contractor in Liverpool, and on his retirement from business went to reside at Prestatyn.

The death took place recently of Mr. Evan Davies, builder, Bryn Awel, Treherbert, Rhondda Valley.

The death took place recently at Liberton of Mr. John White (retired builder), in his 78th year.

THE NEW RENT BILL

THE short Bill which was introduced last week by the Minister of Health as a Government measure consists of three operative clauses. The first provdes that, notwithstanding anything in section 5 of the Rent Act, 1920, as altered by section 4 of the Act of 1923, "a court shall not make or grant an order or judgment for the recovery of possession of a dwelling house to which the principal Act applies, or for the ejectment of the tenant therefrom on the ground of non-payment of rent, in any case where it appears to the court that the non-payment is due to the inability of the tenant to obtain employment, unless the court is satisfied that greater hardship would be caused by refusing to grant such an order than by granting it." The effect of the clause appears to be to substitute for the general discretion now vested in the court in the existing Act ("and in any such case as aforesaid the court considers it reasonable to make such order") the duty of weighing the degree of hardship between the landlord not receiving rent and the tenant unable to pay it. This illustrates the curious development of the principle of rent restriction, for the landlord is placed upon an entirely different footing to any other owner of property, and the burden of keeping an unemployed tenant rent free is placed upon him, unless he can prove, not equal hardship, but greater hardship than his tenant. On what possible principle can the burden of unemployment be placed thus on private shoulders?

Then again, the test to be applied by the court is not the ability of the tenant to pay, but his inability to obtain employment. The tenant himself, owing to unemployment, may be without means and unable to pay the rent; but in the house, living with him, his wife or sons and daughters may all be earning money, or he may have sublet a portion of the house, and the family as a family may well be able to pay rent; but the tenant himself may come before the Court and prove his own unemployment and want of means, and the landlord may be compelled to keep the family rent free, whilst himself liable for the rates. This clause will certainly need drastic amendment. Since this article was written this clause has been rejected by Parliament, and the Government has endeavoured to amend the Bill so as to make it prohibit eviction until the tenant has had a reasonable opportunity of applying for relief from the local Poor Law authority. A technical difficulty has arisen as to the amendment of the clause in this Bill, as it involves a "money measure," and thus the Bill is practically withdrawn. But as no serious objection has been raised to the remaining clauses, at any rate for the purpose of a second reading of the Bill, we publish our original comments on these clauses, as they will certainly require consideration.

The second clause deals with paragraphs (iv) and (v) of subsection 1 of section 5 of the principal Act, that is, section 5 as altered by section 4 of the Act of 1923.

The legislation as it stands is not at all too clear, and before referring to the new Bill we must show how it stands. In section 5, subsection (1) (*d*) one of the grounds for obtaining possession is that the dwelling house is reasonably required by the landlord for occupation as a residence for himself or for any son or daughter of his over eighteen years of age, but this is provisional on the Court being satisfied that alternative accommodation shall be available.

Following upon the group of paragraphs in which this provision is contained, there are another set of paragraphs headed "The existence of alternative accommodation shall not be a condition of an order or judgment on any of the grounds specified in paragraph (*d*) of this subsection," in the cases enumerated in certain paragraphs, and paragraph (iv) provides that where the landlord or the husband or wife of the landlord became the landlord before June 30, 1922, the requirement of alternative accommodation shall be dispensed with altogether if the house is required as a residence by the landlord himself, or for any son or daughter over eighteen years of age; while paragraph (v) provides that if he became the landlord after June 30, 1922, then the Court has to be satisfied that greater hardship would be caused by refusing the order for possession than by granting it. The new Bill substitutes for both these paragraphs one single paragraph as follows:—"Where the dwelling house is reasonably required by the landlord for occupation as a residence for himself, and the Court is satisfied that greater hardship would be caused by refusing to grant an order for judgment for possession than by granting it."

It will be seen that the effect of this amendment is to eliminate altogether the distinction made according to the date when the landlord became landlord, to eliminate the husband or wife of the landlord, and to throw the cases where the house is required for sons or daughters back on paragraph (*d*). Thus, where the house is required for a son or daughter under paragraph (*d*), the Court would have to be satisfied "that alternative accommodation is available which is reasonably suitable to the means of the tenant and to the needs of the tenant and his family as regards extent, character, and proximity to place of work, and which consists either of a dwelling house to which this Act applies, or of premises to be let as a separate dwelling on terms which will afford to the tenant security of tenure reasonably equivalent to the security afforded by this Act in the case of a dwelling house to which this Act applies."

But where the house is required by the landlord for his own occupation, the Bill as drafted leaves it obscure under which paragraph the application must be treated—paragraph (*d*) or the new clause (iv)—and both seem applicable to precisely similar circumstances. There was always some obscurity in the Acts on this point, but this Bill, as drafted, makes the Act directly contradictory, and this point must certainly be cleared up in Committee.

Clause 3 is a curious piece of retrospective legislation.

Subclause (1) of clause 3 is as follows:—"Where any order or judgment has been made or given before the passing of this Act, and in the opinion of the Court the order or judgment would not have been made or given if this Act had been in force at the time when such order or judgment was made or given, the Court, on application by the tenant shall, unless the order or judgment was executed before March 31, 1924, rescind the order or judgment, and in lieu thereof make such order or give such judgment as the Court shall think fit for the purpose of giving effect to this Act."

We take objection to the form of this subsection, which enables any tenant to require a rehearing of any case decided before the passing of this Act in which the judgment or order has not been executed before March 31 last, and is a serious blow to the finality of justice; and subclause (2) carries the matter further, for it provides: "Where the Court has so rescinded any order or judgment, the Court shall, if the order or judgment was executed on or after March 31, 1924, and notwithstanding that the landlord or any person claiming under him is in possession, make such further order or give such further judgment as may be necessary to enable the tenant to resume possession of the dwelling house upon such terms as appear to the Court to be equitable." In other words, these clauses, because the Legislature has introduced a piece of emergency legislation to meet particular cases of alleged hardship, read in conjunction with clause 2, may subject landlords of any restricted house of any value who have recovered possession under section 5 as unamended by clause 2 to double proceedings, and to eviction if they have regained possession since March 31, and the Courts were asked to find "equitable" grounds for such a policy. We cannot think that Parliament will allow such a perversion of justice or permit the faith in legislation to be so shaken, and these clauses should apply only to working-class dwellings in any case.

Subclause (3) provides that where a landlord has, after March 31, taken possession of a dwelling house under a judgment or order so rescinded, such possession shall not in any case exclude the dwelling house from the operation of the principal Act.

We have said the Bill consists of three operative clauses, for the fourth clause is only formal, giving the title and providing that the Act shall be read as one with the existing Acts. Landlords and house property have long been made the victims of legislation, and the disastrous consequences to housing have been entirely overlooked in the desire to protect a certain class of tenants; but this Bill appears a hastily devised measure to remedy what may be certain grievances with a lamentable lack of statesmanship or foresight.

We notice that rent restriction is always spoken of as though it only affected the very poor, and this Bill is directed to relieving the "unemployed"; the fact is entirely lost sight of that rent restriction embraces houses the standard rent or the rateable value of which does not exceed £105 in the Metropolitan area, £90 in Scotland, and £78 elsewhere. The present Bill has been introduced more especially with reference to housing conditions in Scotland, and this seems a suitable occasion once more to urge that rent restriction should now be limited in any form whatever to the low-valued houses which may properly be termed "working-class dwellings."

This Bill is admittedly an emergency measure, and therefore it certainly should be limited to the class of dwelling house where the emergency exists, and we trust this will be insisted upon in Committee; but in any case, as we have shown, the Bill is badly drafted, and as it has to be read as one with the existing Acts, clause 3 would cover orders and judgments made under clause 2 as well as clause 1—that is, cases where possession has been obtained on other grounds than non-payment of rent. The continuance of restriction as regards the higher-valued houses is not only entirely uncalled for, but it is the cause of hardship to persons who occupy such dwelling houses. So long as restriction is continued houses will not be let on lease, and there is a very large class of persons who cannot buy their houses, especially at the price which is asked, owing to restriction having limited the supply and discouraged the building or owning of houses to be let on lease by way of business.

St. Paul's Bridge.

Sir William Bull, M.P., presided at a meeting of the Metropolitan Members of Parliament, at the House of Commons recently, when a deputation attended from the Royal Institute of British Architects, the London Society, the Town Planning Institute, and the Architecture Club, to present their views on the proposed St. Paul's Bridge.

Mr. Paul Waterhouse (Royal Institute of British Architects) stated the objections to the bridge, especially its situation at the northern end, which would, in his opinion, simply lead to confusion.

Mr. Carmichael Thomas (London Society) and Mr. W. R. Davidge (Town Planning Institute), explained the objections of their respective societies to the scheme.

Sir Banister Fletcher described the scheme as a monstrous idea and against the City interests.

Viscount Curzon said he would press for an inquiry into the whole scheme in view of the proposed circular road round London.

Sir William Davison, M.P., Lieutenant-Colonel Fremantle, M.P., Sir Herbert Nield, K.C., M.P., and other members, having expressed their objections to the scheme, those present, on the motion of Viscount Curzon, passed a resolution urging the Ministry of Transport to spend no money on the scheme until Parliament had been consulted.

BOOK REVIEWS.

Practical Cabinet Making. By H. G. PHILLIPS. (London: George Routledge & Sons, Ltd.). Price 5s. net.

For long enough we have been satisfied with atrociously bad modern furniture, with indifferent copies of past pieces, or—those who can afford them—with genuine antiques. The inevitable results have been a gradual drying-up of the fount of inspiration and a decay of good craftsmanship. To-day, however, there are, fortunately, signs of real improvement in this deplorable state of affairs. No one could have visited the recent Industrial Art Exhibition at the South Kensington Museum without being struck by the high standard of the furniture exhibits. Many of the designs were exceedingly good, and, moreover, they were expressive of the tendencies of the day. One saw there the labour-saving aspirations translated into terms of art, as it were, for the predominant note was a simplicity—an austerity it might almost be called—and a simplification of mouldings. Moreover, the workmanship was of a very high standard and such as would compare favourably with that of any epoch.

Mr. Phillips' book, therefore, is a sign of the times. It is essentially a practical work, and is mainly addressed to those who handle the tools. It also contains chapters on machines and workshop organisation. Many of the actual designs are indifferent, but the main use of the book is for those who would actually make furniture, rather than for those who would design it; but in so much as no one can design furniture who is unfamiliar with the method of its manufacture, even if he be himself unable to handle tools with skill, it is a book that may well be of value to anyone interested in the making of good furniture. And what architect is not? The illustrations are numerous and lucid.

Wireless for the Amateur. By J. ROUSSEL. Authorised translation with additions by H. B. GRYLLS. (London: Constable & Co.) Price 14s. net.

To those who desire to have more than a superficial knowledge of wireless, we would strongly recommend this book. It is simple and thorough and such as anyone with a familiarity with the elements of electricity should have no difficulty in following. It is one thing to know the function of the valve in receiving and transmitting, it is another to understand the principle of its action and the relation of filament, grid, and sheath. It is one thing to know that C.W. depends upon heterodyning, another to grasp exactly what deterodyning is (a fine example of heterodyning can be observed with two single-cylinder motor cycles running side by side, but whose engines are running at slightly different speeds). This book, indeed, is a sane combination of theory and practice. Nowadays it is easy enough to acquire a working circuit diagram from which, with scarcely any knowledge, it is possible to build up a successful set, but those with an inquiring mind will not be satisfied with mere mechanical efficiency; they will be beset with the why and the wherefore of the phenomenon. By reading this lucid book they will obtain much enlightenment. Sooner or later the study of wireless, as, indeed, of all other scientific subjects, will merge into higher mathematics, and for those who would pursue the subject into these abstract realms there is an interesting chapter which may stimulate to further research. The historical development of the subject is also dealt with, and the translator has added some useful information in connection with British broadcasting. The times and wave-lengths of the various stations all over the world are tabulated, and details of time signals are given. It should be pointed out that the book is written by an amateur and is essentially for amateurs, and the text and the diagrams are consistently clear.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick-layers.	C'p'ters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bedford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Brentwood	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bridgwater	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Brighton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cambridge	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Colchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
E. Glam. (Mon. Vall)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Exeter	1/51	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Gloucester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Grays	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Great Yarmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ipswich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Lancaster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leamington Spa	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Luton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/0½
Norwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Oxford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2
Plymouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Portsmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Reading	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/1½
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/1½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/0½
Southampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/2½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/1½
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/0½
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2½
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/0½
Windsor	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/2½
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/1½
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	

(For rates of wages in the Building Trade in Scotland, see page 613.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

APRIL 12.—**Birmingham.**—RESTORATION WORK.—Restoration of the tower of Northfield Parish Church, Birmingham, and other incidental work. Enquiries only invited from tradesmen with previous experience in this class of work. Architect, Mr. W. H. D. Caple, F.R.I.B.A., Diocesan Surveyor, Queen's College, Birmingham.

APRIL 12.—**Dewsbury.**—DEMOLITION, &C.—For the demolition of property and building of boundary wall and retaining wall, for the T.C. Mr. H. Dearden, Borough Engineer, Town Hall, Dewsbury.

APRIL 12.—**Dewsbury.**—WALL.—For the re-building of masonry wall at the junction of Staincliffe-road and Heckmondwike-road, for the T.C. Mr. H. Dearden, Borough Engineer, Town Hall, Dewsbury.

APRIL 12.—**Dublin.**—PAINTING.—For painting of the Locomotive Running Shed, Amiens-street Station, for the Great Northern Railway (Ireland) Co. Mr. J. B. Stephens, secretary, Amiens-street Station, Dublin. Deposit £1 1s.

APRIL 12.—**Preston.**—GARAGE.—Erection of proposed motor bus garage on the Moor, Deepdale, for the County Borough of Preston. Borough Surveyor, Town Hall, Preston.

APRIL 12.—**Pudsey.**—HOUSES.—For 100 to 200 concrete houses and bungalows, for the T.C. Mr. Alfred E. Evans, Town Clerk, Town Hall, Pudsey.

APRIL 12.—**Reigate.**—HOUSES.—Erection of 30 houses (in pairs) on the Hooley Mead Estate, Earlswood, for the T.C. of Reigate. Borough Engineer and Surveyor, Municipal Buildings, Reigate. Deposit £2 2s.

APRIL 12.—**St. Austell.**—PREMISES.—Erection of new business premises, Fore-street, St. Austell, for Mr. J. F. Kirk. Messrs. Andrew & Randell, architects, New Inn Chambers, St. Austell.

APRIL 12.—**Swansea.**—SEMI-PERMANENT CONSTRUCTION.—Erection of departments of engineering and arts for the Council of the University College of Swansea. Mr. Oliver S. Portsmouth, A.R.I.B.A., architect, Llanfair-buildings, Swansea. Deposit £3 3s.

APRIL 12.—**Westhampnett.**—HOUSES.—For the erection of ten houses at Woodgate, in the parish of Aldingbourne, for the R.D.C. Clerk, Council Offices, Pallant House, Chichester.

APRIL 14.—**Australia.**—RADIO STATION.—For erection of or supply of materials for a radio station at Wave Hill, Northern Territory, Australia. Supply Officer, Australia House, Strand. W.C. 2.

APRIL 14.—**Bradford.**—EXTENSIONS.—Erection of new stores and extensions to Nos. 62 to 72 and 76 to 86, North and East roadways, St. James' Market, for T.C. City Architect, Town Hall, Bradford.

APRIL 14.—**Cardiff.**—PAINTING.—For painting, &c. at the Ely Isolation Hospital, for the R.D.C. Mr. William Farrow, surveyor, 20, Park-place, Cardiff.

APRIL 14.—**Crewe.**—ALTERATIONS.—For the alterations and additions to Broad-street Schools, for the T.C. Mr. E. G. Timbrell, Borough Engineer, Municipal Buildings, Crewe.

APRIL 14.—**Croydon.**—HOUSES.—Erection of 48 houses (comprising 62 tenements) at Thornton-road, Thornton Heath, in two sections, of 24 houses each, or as one tender for the whole, for the County Borough Council of Croydon. Borough Engineer, Town Hall, Croydon. Deposit £2 for each section, or £4 for both sections.

APRIL 14.—**Fleetwood.**—EXTENSIONS.—For the erection of extensions, of semi-permanent construction, at the Fleetwood Secondary School, for the Lancashire C.C. Mr. Henry Littler, Architect, 16, Ribblesdale-place, Preston. Deposit £2.

APRIL 14.—**Flintshire.**—REPAIRS.—For repairs to be carried out at the holdings occupied by Messrs. R. H. Evans and E. O. Hughes, situate near to Gelli Fowler, Brynford, Holywell, for the Flintshire C.C. Mr. J. P. Griffiths, Chief Agricultural Officer, County Buildings, Mold.

APRIL 14.—**Greenwich.**—REPAIRS, &C.—For executing repairing and redecorative works to 11 houses in Blackheath and Charlton, for the B.C. Mr. F. J. Simpson, Town Clerk, Town Hall, Greenwich.

APRIL 14.—**Hemsworth.**—HOUSE.—For erection at Hemsworth Secondary School of house for headmaster, for the West Riding E.C. Education Department, County Hall, Wakefield.

APRIL 14.—**Hertford.**—HOUSES.—Erection of 24 houses in Ware-road, for T.C. Borough Surveyor The Castle, Hertford. Deposit £3 3s.

APRIL 14.—**Hull.**—PUMPING STATION.—For the construction of a ferro-concrete and brick pumping station, for the T.C. Mr. F. W. Bricknell, City Engineer, Guildhall, Hull.

APRIL 14.—**Mirfield.**—PAINTING.—For painting houses on Wilson-terrace, for U.D.C. Surveyor, Council Offices, Mirfield.

APRIL 14.—**Preston.**—WALLS.—For taking down and setting back of garden palisade walls, &c., in Addison road West, for T.C. Borough Surveyor, Town Hall, Preston.

APRIL 14.—**Reigate.**—EXTENSIONS TO BUILDINGS, &c.—Extensions to buildings and machinery foundations in connection with the electricity undertaking, for the Reigate B.C. Consulting Engineer, Mr. C. H. Wordingham, C.B.E., M.Inst.C.E., 7, Victoria-street, London, S.W.1. Deposit £3 3s. (payable to Mr. C. H. Wordingham).

APRIL 14.—**Romford.**—COTTAGES.—For the erection of a pair of cottages at Bury Farm, Great Warley, for the R.D.C. Mr. W. J. Grant, surveyor, 16A, South-street, Romford.

APRIL 14.—**Skegness.**—PAINTING.—For painting on housing estate, for the U.D.C. Mr. R. H. Jenkins, Surveyor, Council Offices, Skegness. Deposit £1 1s.

APRIL 14.—**Stoke Newington.**—EXTENSION.—For the erection and completion of extensions to the Electricity Sub-station, in Edward's-lane, N. 16, for the Metropolitan Borough. Borough Surveyor, Town Hall, Stoke Newington. Deposit £5.

APRIL 14.—**Sligo.**—STATION BUILDINGS.—For reconstruction of station buildings for Midland Great Western Railway of Ireland Co. Mr. P. A. Hay, secretary, Broadstone Terminus, Dublin.

APRIL 14.—**Tiverton.**—CHIMNEY.—For raising the chimney of boiler house at Institution of the B.G. Mr. J. F. Pugsley, Clerk, Tiverton.

APRIL 15.—**Ballymena.**—ALTERATIONS.—For alterations and additions to premises in Broughshane-street, Ballymena. Messrs. F. & J. M'Ardle, architects, 29, Rosemary-street, Belfast. Deposit £2 2s.

APRIL 15.—**Bri Chualann.**—HOUSES.—Erection of one block of seven houses at St. Kevin's-square, for U.D.C. Mr. P. H. McCarthy, 26, Lower Leeson-street, Dublin. Deposit 15s.

APRIL 15.—**Chepstow.**—CONVERSION.—For the conversion of the premises known as Larkfield, Chepstow, into a public secondary school, for the Monmouthshire E.C. Mr. John Bain, F.R.I.B.A., County Hall, Newport, Mon.

APRIL 15.—**Douglas.**—CONVENIENCES.—For the erection of: (*a*) Public conveniences, shelter, refreshment room, &c., at junction of Peel-road and Pulrose-road; (*b*) erection of public conveniences and shelter adjoining Waverley-terrace, York-road, for the T.C. Borough Surveyor, Town Hall, Douglas.

APRIL 15.—**Downham.**—HOUSES.—For the erection of houses in pairs at Ten Mile Bank, Hilgay (one pair), and at Southery (three pairs), for the R.D.C. Mr. S. C. Rigg, "Lynnwood," Downham, Norfolk. Deposit £1 1s.

APRIL 15.—**Frinton-on-Sea.**—GROYNES.—For the construction of fourteen timber groynes on the beach and foreshore, for the U.D.C. Surveyor, Council House, Frinton-on-Sea.

APRIL 15.—**Glasgow.**—HOUSES.—Erection of Toll-cross housing scheme, for the T.C. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

APRIL 15.—**Glasgow.**—TENEMENTS.—Erection of tenement houses at Whitefield-road and Brand-street, for the T.C. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

APRIL 15.—**Kirkcaldy.**—ADDITIONS.—For alterations and additions to the Post Office, Kirkcaldy. Architect, H.M. Office of Works, 4–5, Drumsheugh-gardens, Edinburgh. Deposit £1 1s.

APRIL 15.—**Llansilin.**—COTTAGE.—For erection of cottage, for the Liverpool T.C. Resident Engineer, Llanforda Filters, Oswestry. Deposit £1 1s.

APRIL 15.—**London.**—RECONSTRUCTION.—For reconstruction and painting of the Crystal Palace tank and structure, Sydenham Hill, S.E., for Metropolitan Water Board. Chief Engineer, Metropolitan Water Board, New River Head, Clerkenwell, E.C. 1. Deposit £2 2s.

APRIL 15.—**Pontefract.**—BUNGALOW.—For the erection of bungalow in Ackworth-road, Pontefract, for Mr. G. W. Shepherd. Messrs. Garside & Pennington, architects, Pontefract.

APRIL 15.—**Rosslare.**—OFFICES.—For the erection of offices at Rosslare Pier (about 40,000 cub. ft.), for the Great Southern and Western Railway Co. Chief Engineer, Inchicore, Dublin. Deposit £1 1s.

APRIL 16.—**Barrow-in-Furness.**—PUBLIC CONVENIENCES.—Erection of women's convenience in Duke-street, and an extension of the men's convenience in Church-street, for T.C. Borough Engineer, Town Hall, Barrow-in-Furness.

APRIL 16.—**Bournemouth.**—FOOTBRIDGES.—For the construction of reinforced concrete footbridges at Boscombe Chine and at Alum Chine, for the T.C. Mr. F. P. Dolamore, Borough Engineer, Bournemouth. Deposit £1 1s.

APRIL 16.—**Bradford.**—PAINTING.—For external painting in Kirkgate Market, for T.C. City Architect, Town Hall, Bradford.

APRIL 16.—**Dewsbury.**—HOUSE.—Erection of a detached house off Wakefield-road. Messrs. Firth, Son & Blackburn, architects, 22, Wellington-road, Dewsbury.

APRIL 16.—**Hay.**—MARKET.—For the construction of a cattle market at Talgarth, for the R.D.C. Mr. A. Howard, Clerk, Hay, near Hereford.

APRIL 16.—**Holbeach.**—BUILDING.—Erection of building at Workhouse for use as washhouse, for the B.G. Mr. S. Mossop, Clerk, Holbeach.

APRIL 16.—**Leyburn.**—ADDITIONS.—For additions to premises, for the Co-operative Society. Secretary, Co-operative Society, Priestgate, Darlington.

APRIL 16.—**Liverpool.**—HOUSES.—For erection of 24 tenement dwellings in Bond-street (Burlington-street Scheme), for T.C. Housing Officer, Municipal Buildings, Dale-street, Liverpool. Deposit £2 2s.

APRIL 16.—**Lambeth, S.W.2.**—DEMOLITION AND CLEARING SITE.—(*a*) The demolition of Bloomfield Hall, Central Hill, Upper Norwood, and (*b*) the clearing of site of timber, &c., preparatory to the erection of houses thereon. Mr. Osmond Cattlin, Assoc.M.Inst.C.E. (Chartered Civil Engineer), Borough Engineer, Brixton Hill, S.W.2. Deposit £1 1s.

APRIL 16.—**Lingfield, &c.**—HOUSES.—For the erection of 16 working-class dwellings at Saxbys-lane, Lingfield, 12 at Park Farm, Limpsfield, and six at Hollow-lane, Dormansland, for Godstone R.D.C. Mr. George E. Crowter, Acting Buildings Surveyor, Council Offices, Oxted. Deposit £2.

APRIL 16.—**Lurgan.**—HOUSES.—For the erection of 22 cottages for the Northern Ministry of Finance. Secretary, 15, Donegall-square West, Belfast. Deposit £1.

* APRIL 16.—**Norwich.**—HOUSES.—Basic prices have been fixed for the building of 200 houses on the Mile Cross and Earlham Housing Estates, Norwich, to architect's designs. Builders desirous of undertaking to build blocks of houses at these basic prices and tender at other than the basic prices may see the Plans, &c., at the Office of the City Engineer. Mr. Arthur E. Collins, M.Inst.C.E., City Engineer, Guildhall, Norwich.

APRIL 16.—**Ormskirk.**—HOUSES.—For erection of 20 houses on the Tank-lane Site, for U.D.C. Mr. H. W. Chadwick, Surveyor, District Council Offices, Burscough-street, Ormskirk. Deposit £2 2s.

APRIL 17.—**Batley Carr.**—OFFICES.—Erection of a four-storied block of offices and warehouse at Victoria Mills. Messrs. Kirk, Sons & Ridgway, architects, Market-place, Dewsbury.

APRIL 17.—**Blackpool.**—CONVERSION.—For the conversion of the Bispham electricity station into public hall, branch library and reading room, for the T.C. Mr. Francis Wood, Borough Engineer, Blackpool. Deposit £1 1s.

* APRIL 17.—**Eaton.**—HOUSES.—Carrying out of the Council's Housing Scheme of 40 houses, with the necessary roads and sewers at Eaton, Bucks, for the Eaton U.D.C. Messrs. Burgess, Holden & Watson, architects and surveyors, Beaconsfield, Bucks. Deposit £3 3s.

APRIL 17.—**Hull.**—FIRE STATION.—Demolition of the existing buildings and the construction and erection of new central fire station, situate in Worship-street, for the T.C. City Architect, Hull. Deposit £2 2s.

APRIL 17.—**Newcastle-on-Tyne.**—HOUSES.—For the erection of 142 dwellings on the Walker Housing Estate. Housing Architect, 18, Cloth-market, Newcastle. Deposit £2 2s.

APRIL 17.—**Willesden.**—PAINTING.—For the decoration and repair of Nos. 34, 36 and 38, Stafford-road, Kilburn, for the U.D.C. Mr. F. Wilkinson, Engineer, Town Hall, Dyne-road, Kilburn, N.W.6.

APRIL 17.—**Yeovil.**—HOUSES.—For the erection of 12 houses at Stoke-under-Ham, for the R.D.C. Messrs. Petter & Warren, architects, Yeovil. Deposit £2 2s.

APRIL 19.—**Edinburgh.**—ALTERATIONS.—For alterations, &c., at the Central Telephone Exchange, for Commissioners of H.M. Works. Architect, H.M. Office of Works, Edinburgh. Deposit £1 1s.

APRIL 19.—**Prestonpans.**—HOUSES.—Erection of six houses at East Loan, for T.C. Messrs. R. & A. K. Smith, Surveyors, 44, Queen-street, Edinburgh.

APRIL 19.—**Tredegar.**—ALTERATIONS.—For alterations and additions to the Ex-Service Men's Club and Institute, Market-street. Mr. W. E. Jones, architect, Tredegar.

* APRIL 19.—**Wallasey.**—HOUSES.—Erection of 59 houses on the Mostyn-street and Norwood-road site in two sections of 37 houses and 22 houses respectively. Housing Scheme No. 5, Contracts Nos. 1 and 2 for the Council of the County Borough of Wallasey. Borough Engineer and Surveyor's Office (Housing Department), Town Hall, Wallasey. Deposit £1 1s.

APRIL 20.—**Rhewl.**—ADDITIONS.—For additions and alterations to the Rhewl C.M. Chapel, near Ruthin. Mr. R. J. Hughes, A.R.I.B.A., Llanfairfechan.

APRIL 21.—**Bolton-upon-Dearne.**—HOUSES, DRAINAGE, &C.—Erection of 30 dwelling-houses (14 Parlour, 16 Non-Parlour Type) together with road and surface water drainage works in Barmborough-lane, Goldthorpe, also six dwelling-houses (two Parlour, four Non-Parlour Type) on Lockwood's Farm site, Goldthorpe, for the Bolton-upon-Dearne U.D.C. Mr. William H. Adams, M.S.A., Council Offices, Bolton-upon-Dearne. Deposit 10s. 6d.

APRIL 21.—**Newton Stewart.**—HOUSES.—Erection of eight houses on Windsor-road site, for T.C. Mr. A. M'Cormick, Town Clerk, Newton Stewart. Deposit £1 1s.

APRIL 21.—**Penwerris.**—BUNGALOW.—For the erection of a bungalow at Penwerris, Falmouth. Mr. Alfred J. Cornelius, architect, Truro.

APRIL 21.—**Port Talbot.**—WALLS.—Erection of boundary and retaining walls in connection with widening of Cwmavon-road, for T.C. Borough Engineer, Municipal Buildings, Aberavon.

APRIL 21.—**Truro.**—RESIDENCE.—For the erection of a residence at The Crescent, Truro. Mr. Alfred J. Cornelius, architect, Truro.

APRIL 22.—**Aldershot.**—HOUSES.—For the erection of 32 houses, for the T.C. Borough Surveyor, Municipal Buildings, Aldershot. Deposit £1 1s.

APRIL 22.—**Bebington.**—HOUSES.—For the erection of 28 houses in Bebington and 12 houses in Bromborough, for the U.D.C. Council Offices, Bebington.

APRIL 22.—**Chichester.**—HOUSES.—Erection of 38 houses (10 pairs of semi-detached and 3 blocks of 6 for the Chichester Corporation. Messrs. Whitehead & Whitehead, 18, South-street, Chichester. Deposit £1 1s.

APRIL 22. **Hull.**—LAVATORY.—For the erection of public lavatory, East Park, for the T.C. Architect, Town Hall, Hull. Deposit £2 2s.

APRIL 22.—**Hereford.**—HOUSES.—Erection of 24 houses, for the T.C. Mr. H. E. Bettington, Secretary. Hereford Associated Architects, Ltd., Palace Chambers, Hereford.

APRIL 22.—**Roscrea.**—EXTENSION.—For erection of extensive additions to the Roscrea Bacon Factory, Roscrea. Mr. R. P. Gill, Nenagh, or Mr. B. E. F. Sheehy, M.S.A., 57, O'Connell-street, Limerick.

✱APRIL 22.—**Tilbury.**—HOUSES.—Erection of 23 houses on the triangular block system of construction, for the U.D.C. Mr. A. W. Buckner, Clerk to the Council, Council Offices, Tilbury.

✱APRIL 23.—**Brentwood, Essex.**—HOUSE.—Erection of the Medical Superintendent's house at High Wood Hospital, for Children, Ongar-road, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

✱APRIL 23.—**Fulham, S.W.6.**—TAR PAVING, &C.—For tar-paving and repairs to roads at the Western Fever Hospital, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

APRIL 23.—**Cuckfield, Sussex.**—INFIRMARY BLOCK.—Erecting a female infirmary block at the West Hylands Institution at Cuckfield, Sussex, for the Guardians of the Poor Law Union of Cuckfield, Sussex. Mr. Wm. H. Overton, F.S.Arc., F.S.I., 22, Ship-street, Brighton. Deposit £1.

APRIL 23.—**Greenwich, S.E.10.**—HOUSES AND MAISONETTES.—Erection and completion of six houses, comprising twelve maisonettes, on a site at the corner of Coombedale-road and Westerdale-road, Greenwich, for the Council of the Metropolitan Borough of Greenwich. Town Clerk's Dept., Town Hall, Greenwich. Deposit £2 2s.

✱APRIL 23.—**Herne Bay, Kent.**—EXTERNAL CLEANING, &C.—For external cleaning, painting and repairs at St. Anne's Home Herne Bay, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

✱APRIL 23.—**London, S.W.6.**—ROOFING, &C.—Roofing in of a portion of the existing yard, together with incidental building works at the Western Ambulance Station, Seagrave-road, Fulham, S.W.6, for the Metropolitan Asylums Board. Office of the Board, Victoria-embankment, E.C.4. Deposit £1.

APRIL 23.—**London, S.E. 2.**—ROADS.—Repairs to roads at Goldie Leigh Homes, Abbey Wood, S.E. 2, for the Metropolitan Asylums' Board. Office of the Board, Victoria Embankment, E.C. 4. Deposit £1.

APRIL 23.—**London, N.**—SHOPS AND DWELLINGS.—Erection of nine shops with dwellings over (similar types) in Lordship-lane, on the White Hart-lane, Tottenham, for the London County Council. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Deposit £2 to the Cashier of the Council.

✱APRIL 23.—**Margate.**—VERANDAH FLOORS.—Extension of verandah floors at Princess Mary's Hospital for Children, Cliftonville, Margate, for the Metropolitan Asylums Board. Office of the Board, Victoria-embankment, E.C.4. Deposit £1.

APRIL 23.—**Rothwell.**—HOUSES.—For the erection of 52 scullery houses on the Rothwell Haigh, Carlton, Lofthouse, and Thorpe sites, for the U.D.C. Mr. W. Dodgson, Clerk, Council Offices, Rothwell, Yorks.

APRIL 23.—**Tooting, S.W.17.**—JOINERY.—For supplying and delivering prepared joinery to Tooting Bec Mental Hospital extensions, Church-lane, Tooting, S.W.17, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

✱APRIL 23.—**Sutton.**—ALTERATIONS.—For alterations in forming cubicles for staff accommodation in existing buildings, at the Downs Hospital for Children, Banstead-road, for the Metropolitan Asylums Board, Victoria Embankment, E.C.4 Deposit £1.

✱APRIL 23.—**Watford.**—ANNEXE AND LIFT.—Erecting an annexe to the Ward Block and providing therein a hand-power bed lift at the Infirmary in Vicarage-road, Watford, Herts, for the Guardians of the Watford Union. Architects, Messrs. A. Saxon Snell & Phillips, 9, Bentinck-street, Manchester-square, W.1. Deposit £2.

APRIL 23.—**Winfrith.**—LYCH GATE.—For the erection of a lych gate at the churchyard of Winfrith, 3 miles from Wool Station, Dorset. Rector, Winfrith.

✱APRIL 23.—**Woolwich, S.E.18.**—CLEANING, &C.—For cleaning, painting and repair works at the Brook Hospital and the Brook Ambulance Station, Shooter's Hill, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

APRIL 24.—**Bristol.**—SUB-STATIONS.—For the construction of 10 underground sub-stations and extensions to two existing, for the T.C. Mr. H. Faraday Proctor, General Manager, Electricity Dept., The Exchange, Bristol. Deposit £2 2s.

APRIL 24.—**Cockermouth.**—HOUSES.—Erection of 12 houses at Prospect, for the R.D.C. Mr. J. B. Wilson, Surveyor, Cockermouth.

APRIL 24.—**London.**—DEMOLITION.—For demolition of the tower and footbridge at Mucking Lighthouse, River Thames, for Trinity House. Secretary, Trinity House, Tower Hill, E.C. 3.

APRIL 24.—**New Ferry.**—EXTENSIONS, &C.—For the erection of extensions for enlargement of offices and inspector's house at the County Police Station, New Ferry. Mr. H. Beswick, County Architect, Chester. Deposit £1 1s

APRIL 24.—**Near Neath.**—VARIOUS WORKS.—For carrying out for the Neath B.G. the following works:—(1) Internal painting, colouring and repairs at Penrhiewtyn Hospital; (2) engineering repairs and hot water supplies. Mr. J. Cook Rees, architect, Parade Chambers, Neath.

APRIL 24.—**Newtongrange.**—SCHOOL.—Erection of new school at Newtongrange for Midlothian Education Authority. Mr. L. Kemp, County Education Offices, 1, India Buildings, Victoria-street, Edinburgh.

APRIL 24.—**Treeton.**—BATH HOUSE.—Erection of pit head bath house, 182 ft. long, 46 ft. wide, 32 ft. high, with glazed brick partitions and dado and concrete floor. Engineer's Office, Treeton Colliery, near Rotherham. Deposit £1 1s.

APRIL 25.—**Southampton.**—POLICE COTTAGES.—Erection of two police cottages, one at Marchwood and one at Pennington, for the County Borough Council of Southampton. Mr. A. L. Roberts, County Architect, The Castle, Winchester. Deposit £1 1s. for each set of plans, by cheque, payable to Hants. County Council, and crossed "Lloyds Bank, Ltd., Capital and Counties Branch, Winchester."

APRIL 26.—**Aberdare.**—SCHOOL.—For the erection of a new boys' school (to provide accommodation for 272 children). Messrs. Thomas Roderick & Sons, architects, Clifton-street, Aberdare. Deposit £2 2s.

✱APRIL 26.—**Chelsea, S.W.**—SANITARY WORK.—Taking out the existing (upon four floors) and erecting new sanitary fittings, plumbing, and other work to the turret of the new Ward Block at the St. Luke's Hospital, Cale-street, Chelsea, S.W., for the Guardians of the Parish of Chelsea. Guardians' Architect, Mr. Edmund J. Harrison, 23, Berkeley-road, Crouch End, N.8.

APRIL 26.—**Glasgow.**—CONVENIENCE.—Construction of a public convenience in Alexandra Park (1) mason, brick, joiner, &c., works; and (2) sanitary fittings. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

APRIL 26.—**Reigate.**—HOUSE.—Erection of a house in the Castlefield-road for the Baths Superintendent, for the T.C. Borough Surveyor, Municipal Buildings, Reigate.

APRIL 28.—**Andover.**—OFFICES, &C.—For the erection of new offices, folding partition, &c., at Andover (New-Street) Girls' and Infants' Council School, for the C.C. Mr. A. L. Roberts, County Architect, The Castle, Winchester. Deposit £1 1s, by cheque payable to Hants County Council and crossed "Lloyd's Bank, Ltd., Capital & Counties Branch, Winchester."

APRIL 28.—**Southampton.**—ALTERATIONS, &C.—Alterations, remodelling, &c., at New Alresford Council School, for the Hants County Council. Mr. A. L. Roberts, County Architect, The Castle, Winchester, on and after April 10, between the hours of 9 a.m. and 4 p.m.; Saturdays 9 a.m. and 12 p.m. noon. Deposit £1 1s., payable to Hants County Council and crossed "Lloyd's Bank, Ltd., Capital and Counties Branch, Winchester."

APRIL 30.—**Greenwich.**—HOUSES.—Erection and completion of 50 houses (some of which are partially erected) on the No. 3 Section of the Housing Estate at Charlton, for the Metropolitan Borough Council of Greenwich, S.E. Town Clerk's Dept., Town Hall, Greenwich. Deposit £2 2s.

APRIL 30.—**Southend-on-Sea.**—SCHOOLS.—Erection of proposed new secondary schools, Westcliff, for the County Borough of Southend-on-Sea E.C. Mr. H. Farrands, M.A., Director of Education, Education Offices, 20, Warrior-square, Southend-on-Sea. Deposit £3 3s. (cheques to be made payable to the Southend Corporation).

✱MAY 1.—**Llandudno.**—CHILDREN'S HOME.—Erection of a new Children's Home (40 children) in Baden Powell-road, Llandudno Junction, for the Guardians of the Poor of the Conway Union. Mr. S. Colwyn Foulkes, architect, Central Chambers, Colwyn Bay. Deposit £1 1s.

✱MAY 1.—**Portsmouth.**—FLATS.—Erection and completion of four blocks of flats in Voller-street, Landport, and for the maintenance thereof in thorough repair for six calendar months from the completion thereof, for the Portsmouth Town Council. Mr. Arthur W. Ward, Borough Engineer, Town Hall, Portsmouth.

✱MAY 6.—**Hatfield, Herts.**—COTTAGES.—Erection of 24 cottages in the parish of Hatfield, for the R.D.C. Messrs. Crickmer & Foxley, architects, 1, Lincoln's Inn Fields, London, W.C.2. Deposit £2 2s.

✱MAY 6.—**Welwyn, Herts.**—COTTAGES.—Erection of 40 cottages in the parish of Welwyn, in the county of Hertford, for the Welwyn R.D.C. Mr. H. G. Cherry, architect, 97, Jermyn-street, St. James, S.W.1. Deposit £2 2s.

MAY 12.—**Port Talbot.**—PAINTING.—For the painting of the various schools within the Borough. Mr. Moses Thomas, Port Talbot.

NO DATE.—**Ashburton.**—HOUSES.—For the erection of 12 houses at Ashburton, for the U.D.C. Mr. B. H. Palmer, Architect 11, Union-street, Newton Abbot.

NO DATE.—**Bradford.**—PAINTING.—For painting and cleaning work at four relief stations and the Central Offices, for the Board of Guardians. Mr. F. Holland, architect, 22, Manor-row, Bradford. Deposit £2 2s.

✱NO DATE.—**Bath.**—SCHOOL HOUSE.—Additions to a school house, Coombe Down, Bath. Messrs. Beresford Pite & J. S. Hodges, architects, 101, Great Russell-street, W.C.1.

NO DATE.—**Clutton.**—DECORATING.—For re-decoration of Clutton Church. Mr. W. White, Church Farm, Clutton.

NO DATE.—**Cudworth.**—DEMOLITION.—For the pulling down, making good of property, Barnsley-road, Cudworth, for the U.D.C. Mr. J. R. Shephard, Surveyor, Cudworth.

NO DATE.—**Kirkintilloch.**—SCHOOL.—Construction of a small semi-permanent school building (four classrooms) in Kirkintilloch, for the Dumbarton Education Authority. Property Department, Education Offices, 18, Park-circus, Charing Cross, Glasgow. Deposit 10s. 6d.

NO DATE.—**Lindley.**—BUNGALOW.—Erection of a nine-roomed bungalow. Mr. E. Bower, architect, Jovil, Linthwaite.

NO DATE.—**Marsh.**—HOUSE.—Erection of a house and dairy buildings at Marsh. Mr. E. Bower, architect, Jovil, Linthwaite.

NO DATE.—**Rogate.**—HALL.—Erection of Village Hall, Rogate, Petersfield. Mr. J. Auty, A.R.I.B.A., 16, Queen-street, Emsworth.

NO DATE.—**Rogerstone (Mon.).**—HOUSE.—For erecting a house at Cwm, Rogerstone, for Mr. R. Salathiel, Cwm-y-Nant, Risca. Mr. A. Evans, 9, Risca-road, Cross Keys (Mon.).

NO DATE.—**Shapley.**—HOUSES.—For the erection of 16 non-parlour type houses, for the U.D.C. Messrs. R. & W. Dixon, architects, 5, Eastgate, Barnsley.

NO DATE.—**Swansea.**—NURSES' HOME.—Erection of a nurses' home at Parc Beek, Sketty-road, containing 42 bedrooms, recreation room, &c. Mr. G. Moxham, architect, 18, Castle-street, Swansea. Deposit £5 5s.

NO DATE.—**Trim.**—PREMISES.—For proposed new premises in Trim, Co. Meath, for Messrs. Allen Bros. Mr. A. Edward Smith, F.S.I., 5, St. Andrew-street, Dublin. Deposit £2 2s.

NO DATE.—**Trim.**—RECONSTRUCTION.—For reconstruction and additions to Town Hall, Trim, Co. Meath, for the U.D.C. Mr. A. Edward Smith, 5, St. Andrew-street, Dublin. Deposit £2 2s.

NO DATE.—**Trowbridge.**—PAINTING, &C.—For redecoration of and alterations to rostrum and choir stalls at the Wesleyan Church, Mr. W. W. Smallum, architect, Trowbridge.

NO DATE.—**Wortley.**—HOUSES.—For the erection of 75 houses at Mortomley, and alternatively 45 houses at Mortomley, 20 at Ecclesfield, and 10 at Tankersley, respectively, for the R.D.C. Mr. F. Thurlby, surveyor, Grenoside, Sheffield. Deposit £2 2s.

FURNITURE, MATERIALS, etc.

APRIL 12.—**Bootle.**—MATERIALS.—Granite channels, kerbs, &c., for T.C. Borough Engineer, Town Hall, Bootle.

APRIL 12.—**Manchester.**—SEATING.—For supplying and fixing seating accommodation in the Boardroom of the Union Offices. Mr. E. Hargreaves, Superintendent of Works, Union Offices, All Saints, Manchester.

APRIL 14.—**Fareham.**—MATERIALS.—For the supply of granite and limestone for one year. Mr. J. F. Whitear, Surveyor, 97, West-street, Fareham.

APRIL 14.—**Maldon.**—MATERIALS.—Supply of broken granite, Kentish flints, and gravel to the R.D.C. Mr. E. J. Ennals, Surveyor, 6, Market Hill, Maldon.

APRIL 15.—**Bridlington.**—MATERIALS.—For supply of hardware, ranges and sanitary fittings for 20 houses for the T.C. Borough Engineer, Bridlington.

APRIL 15.—**Islington.**—MATERIALS.—Supply of salt glazed ware pipes and gullies. Borough Engineer, Islington, N.

APRIL 15.—**North Walsham.**—MATERIALS.—Supply of broken granite, granite chips, broken gravel, binding silt and for road rolling, for the U.D.C. Mr. Wilfred Morris, Surveyor, North Walsham.

APRIL 16.—**Mareh.**—MATERIALS.—For supply of road materials to the U.D.C. Mr. C. Greenwood, Clerk, March.

✱APRIL 17.—**London, S.E.**—ELECTRIC LIGHTING.—For the installation of a complete electric lighting scheme at the Southwark Hospital, East Dulwich-grove, S.E., for the Southwark Union. Guardians' Architects, Messrs. A. Saxon Snell & Phillips, F., A.R.I.B.A., 9, Bentinck-street, Manchester-square, W.1. Deposit £5, on April 12, 14, 15, 16 and 17, between the hours of 10 a.m. and 4 p.m. (10 a.m. and 1 p.m. on Saturday).

APRIL 18.—**Frimley.**—MATERIALS.—Supply of various materials for public services to the U.D.C. Mr. H. Fox Hill, Surveyor, Council Offices, Camberley.

APRIL 19.—**Glasgow.**—MATERIALS.—For supply of various materials required by the Electricity Department for one year, for T.C. Mr. R. B. Mitchell, Engineer, 75, Waterloo-street, Glasgow.

APRIL 21.—**Edinburgh.**—MATERIALS.—Supply of road and other materials, for one year, for Midlothian C.C. Road Officer, County Buildings, Edinburgh.

APRIL 21.—**Sefton.**—MATERIALS.—Supply of highway materials to the R.D.C. Mr. F. Pocl, surveyor, 21, Evered-avenue, Walton, Liverpool.

APRIL 21.—**Tenterden.**—MATERIALS.—Supply of road materials to the T.C. Mr. W. L. C. Turner, Borough Surveyor, Town Hall, Tenterden.

APRIL 24.—**Worthing.**—MATERIALS.—For supply of tarred slag, and tarred granite chippings for T.C. Borough Surveyor, Municipal Offices, Worthing.

ENGINEERING, IRON AND STEEL.

APRIL 12.—**Manchester.**—AIR COMPRESSOR.—For erection of an air compressor at the Withington sewage works, Choriton-cum-Hardy, for T.C. Secretary of the Rivers Dept., Town Hall, Manchester.

APRIL 12.—**Wallingford.**—HEATING.—For the installation of new calorifiers, mains and accessory works in connection with the heating apparatus at the Institution of the Board of Guardians. Mr. P. C. A. Slade, Clerk, Union Offices, Wallingford, Berks. Deposit £5 5s.

APRIL 14.—**Eastbourne.**—ROADS.—For resurfacing passages in tarmacadam at the rear of Seaside and Fairlight-road, for the T.C. Mr. Leslie Roseveare, Borough Engineer, Town Hall, Eastbourne.

APRIL 14.—**Glyncorrwg.**—BRIDGE.—For ferro-concrete bridge at Cymmer, "Hennebique System," for the U.D.C. Messrs. L. G. Mouchel & Partners, Ltd., 36–38, Victoria-street, Westminster, S.W.1. Deposit £2 2s.

APRIL 14.—**Pretoria.**—STEEL PIPES.—For supply of 12 in., 14 in. and 18 in. steel pipes, for Municipality of Pretoria. Messrs. Beckett, Son & Co., Suffolk House, 5, Laurence Pountney-hill, E.C. 4.

APRIL 14.—**Salford.**—GANGWAYS.—For the supply and erection of four iron-suspended gangways. General Manager, Tramways Dept., 32, Blackfriars-street, Salford.

APRIL 15.—**Fraserburgh.**—SLIPWAY.—For the construction of a slipway at Faithlie Harbour, for the Fraserburgh Harbour Commissioners. Mr. Hugh R. Barr, 15, Regent Quay, Aberdeen.

APRIL 15.—**Haswell.**—ELECTRIC LIGHTING.—For installing a complete system of public street lighting by electricity for the Haswell Ward of the Parish. Mr. T. Gustard, Clerk to the Parish Council, Council Office, Haswell, Sunderland.

APRIL 16.—**Glasgow.**—VARIOUS WORKS.—For (1) heating system; (2) steel windows; (3) glazier work; (4) tile work; (5) malleable iron railings, gates and roller shutters; (6) electric lifts; and (7) electrical installation in connection with widening of Stockwell-street, for the T.C. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

✱APRIL 16.—**Bournemouth.**—FOOTBRIDGES.—Construction of reinforced concrete footbridges at Boscombe Chine and at Alum Chine, for the County Borough Council of Bournemouth. Mr. F. P. Dolamore, Borough Engineer, Town Hall, Bournemouth. Deposit £1 1s.

APRIL 16.—**Glasgow.**—VARIOUS WORKS.—(1) Removal of a steel sheeted roof, about 10,000 sq. yds.; (2) taking down sundry brick walls; (3) replacing and repairing railway girders; and (4) re-sheeting about 2,000 sq. yds. of roof, at Provan Gas Works, for the T.C. General Manager, Gas Department, 30, John-street, Glasgow. Deposit £5.

APRIL 17.—**Nottingham.**—HOPPERS, &C.—For about 136 tons of iron and steel work, in stanchions, ordinary and plated beams, hoppers, dished and flat flooring staircases, &c., for the T.C. Mr. T. Wallis Gordon, City Engineer, Guildhall, Nottingham. Deposit £2.

APRIL 18.—**Aberdeen.**—STEELWORK.—Supply and erection of 90 tons of structural steelwork for extension of boiler house. Mr. J. A. Bell, City Electrical Engineer, Aberdeen. Deposit £2 2s.

APRIL 21.—**Sleaford.**—TAR BOILERS.—For supply of three No. 40 gallon tar and bitumen boilers, for the R.D.C. Mr. E. H. Godson, Clerk, Sleaford.

APRIL 21.—**Paisley.**—HEATING, &C.—For heating and ventilation work and electric work at new administrative offices, for the Renfrewshire Education Authority. Mr. J. Hamilton Pullar, Executive Officer, County Education Offices, Paisley. Deposit 10s.

APRIL 21.—**Preston.**—STEEL WORK.—For steelwork required in the alterations and additions to the destructor at Deepdale, for T.C. Borough Surveyor, Town Hall, Preston.

APRIL 23.—**Ayr.**—BRIDGE, &C.—For the widening of Tam's Brig and Prestwick-road, &c., for the T.C. Mr. John Young, Burgh Engineer, Town Buildings, Ayr. Deposit £2 2s.

APRIL 23.—**Dublin.**—ELECTRICAL WORKS.—For electrical works and supplies required by the Commissioners of Public Works in the Dublin District for six months. Mr. J. J. Healy, Secretary, Office of Public Works, Dublin. Deposit £1.

APRIL 23.—**Hull.**—BRIDGE.—For construction of railway bridge, for the T.C. City Engineer, Hull. Deposit £1.

APRIL 23.—**Horsted Keynes.**—RESERVOIR.—For the construction of a reinforced concrete open reservoir of about 200,000 gallons capacity at the Holy Well Pumping Station, Horsted Keynes, for the Mid-Sussex Joint Water Board. Mr. Francis Martin, Engineer, Waterworks Offices, Boltro-road, Haywards Heath. Deposit £2 2s.

APRIL 23.—**Merthyr Tydfil.**—FILTERS.—For the supply and erection of pressure gravity types of filters to deal with 7½ million gallons of water per day of 24 hours, for the Taf Fechan Water Supply Board. Messrs. Sir Alex. Binnie, Son, & Deacon, 30, Buckingham Gate, Westminster, S.W. 1. Deposit £5.

APRIL 23.—**Singapore.**—PIPES, &C.—For supply of steel pipes, valves, &c., to the Municipality of Singapore. Messrs. A. Binnie, Son, & Deacon, 30, Buckingham Gate, S.W. Deposit £5.

APRIL 26.—**Portland.**—RESERVOIR ROOF.—For taking down existing roof of the Yeates Reservoir, Portland, and the construction of a reinforced concrete roof, for the U.D.C. Mr. R. Davison, Surveyor, Council Offices, Portland.

APRIL 26.—**Swadlincote.**—TANK.—Construction of a water tank in reinforced concrete (capacity 8,500 gallons), for the U.D.C. Mr. George A. Taylor, Surveyor, Council Offices, Swadlincote, near Burton-on-Trent. Deposit £1.

APRIL 28.—**Poole.**—BRIDGE.—For construction of a new bridge over the Channel dividing Poole from Hamworthy, for T.C. Messrs. Livesey, Son & Henderson, 14, South-place, London, E.C.2. Deposit £5 5s.

MAY 1.—**China.**—**BRIDGE.**—**The Commercial Councillor at Peking has forwarded to the Department of Overseas Trade copies of the official text of a call for tenders by the Hai Ho Conservancy Commission, for the erection of a bridge over the Hai Ho at Tientsin. Tenders must be in the hands of the Commission before noon on May 1, 1924. The cost of erecting the new bridge has been roughly estimated at Tls. 700,000, say £105,000. Department of Overseas Trade, 35, Old Queen-street, S.W. 1. Reference 11647/F.R./E.C./2.**

MAY 1.—**Egypt.**—ROOFS, &C.—**Construction of steel roofs and shelter of Alexandria new station, for the Egyptian State Railways. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, Broadway, Westminster, S.W. Charge £6 3s.**

MAY 2.—**Durban, Natal.**—WATER SCHEME.—For supply of large sluice valves, valve tower ironwork, pipes, &c., for Vernon Hooper Dam in Shongweni Water Scheme, for T.C. Messrs. Webster, Steel & Co., 5, East India-avenue, London, E.C. Deposit £5 5s.

MAY 9.—**South Africa.**—COAL ELEVATORS.—Supply and erection of five coal elevators and ten coal shutes, for the Rand Water Board. Dept. of Overseas Trade, 35, Old Queen-street, S.W. Reference 13429/ED/EC/2.

MAY 30.—**London.**—STEELWORK.—Supply to the South Indian Railway Co. of structural steelwork (Machine Shop). Company's Offices, 91, Petty France, Westminster, S.W.1. Charge £1.

JULY 1.—**Chili.**—HARBOUR WORKS.—**For the work of improvement of the Harbour of Constitucion, Chili. Chilian Legation, 22, Grosvenor-square, W.1.**

ROAD, SANITARY, AND WATER WORKS.

APRIL 12.—**Glenties.**—WATERWORKS.—Construction of a concrete intake well in Lough Anna and a concrete tank in the Townland of Dorria, for the R.D.C. Mr. Michael M'Nelis, Clerk, Glenties.

APRIL 14.—**Glasgow.**—ROADS.—For the paving of several streets with compressed rock asphalte, for the T.C. Office of Public Works, 64, Cochrane-street Glasgow.

APRIL 14.—**London, E.C.2.**—SEWER WORKS.—Construction of about 280 ft. of 4 ft. by 2 ft. 8 in. brick sewer (mostly in tunnel) and contingent works, comprising the filling-in of the existing sewer, the reconstruction of gulley and house drains, and connections to existing sewers, &c., beneath Well-street, Cripplegate, for the Corporation of London. Office of the City Engineer, Guildhall, E.C.2. Deposit £2 2s.

APRIL 14.—**Swanage.**—ROADS.—For tarring of 40,000 yds. of roads within the district of the U.D.C. Surveyor, Town Hall, Swanage.

APRIL 15.—**Church.**—ROADS.—For the tarspraying of about 9,500 super. yds. of Dill Hall-lane, for the U.D.C. Mr. F. Howarth, Surveyor, Council Offices, Church, Lancashire.

APRIL 15.—**Newport (Mon.).**—SEWER.—For constructing two sections of sewer in Christchurch-road, Newport, for the B.C. Borough Engineer, 8, Corn-street, Newport (Mon.). Deposit £2 2s.

APRIL 15.—**Wolverhampton.**—WATER MAINS.—**For supply of 15 in. and 12 in. cast-iron trunk mains, for the T.C. Mr. E. A. B. Woodward, Waterworks Engineer, Town Hall, Wolverhampton. Deposit £2.**

APRIL 16.—**Birmingham.**—ROADS.—For the widening and reconstruction of Stoney-lane, Yardley, for the T.C. Mr. H. H. Humphries, City Engineer, The Council House, Birmingham. Deposit £2.

APRIL 16.—**Edinburgh.**—PLAYING FIELD.—For the construction of the embankments, terracing, roads, and drainage of a new playing field at Murrayfield, for the Scottish Football Union. Messrs. Blyth & Blyth, civil engineers, 135, George-street, Edinburgh. Deposit £2 2s.

APRIL 16.—**Guildford.**—ROADS.—For making up Alexandra-terrace, for the T.C. Borough Surveyor, Tuns Gate, Guildford.

APRIL 16.—**Lambeth, S.W.2.**—FOOTPATHS AND ROADWAYS.—Forming new footpaths and roadways, together with the incidental works in the making up of the new streets known as Baytree-road and Claverdale-road, Brixton, S.W.2, for the Lambeth Borough Council. Mr. Osmond Cattlin, Assoc.M.Inst.C.E. (Chartered Civil Engineer), Borough Engineer, Brixton Hill, S.W.2. Deposit £1 in respect of each roadway.

✱APRIL 16.—**Sevenoaks.**—SEWERS.—Extension of the Sewer at Hosey Common in the Parish of Westerham, for the Sevenoaks R.D.C. The Surveyor, J. N. Prior, Council Offices, "Inglewood," Oak Hill-road, Sevenoaks. Deposit £2 2s.

APRIL 16.—**South Mimms.**—ROADS.—For tar spraying 35,000 super yards of roadway, and for supply of road materials, for the R.D.C. Mr. G. Simcox, Bearwood, Potters Bar, N.

APRIL 16.—**Stourbridge.**—ROADS.—For reconstruction of the carriageway in Lower High-street, for T.C. Mr. F. Woodward, Borough Surveyor, Market-street, Stourbridge. Deposit £2 2s.

APRIL 17.—**Bowden.**—ROADS.—For the making-up of Belgrave-road, with tar macadam, for the U.D.C. Surveyor, Council Offices, Bowdon.

APRIL 21.—**Eccles.**—SEWAGE WORKS.—For (1) rotary distributors, penstocks, &c., and (2) storm water pumps, and electric motors, for the T.C. Mr. T. S. Picton, Borough Engineer, Eccles. Deposit £2 2s.

APRIL 21.—**Essex.**—CULVERTS.—(*a*) Reconstruction of culvert on the Bures-Colchester main road, in the parish of Wormingford; (*b*) Reconstruction of culvert on the Colchester-Tiptree-Maldon main road, in the Parish of Great Totham, for the Essex C.C. Mr. W. H. Morgan, County Surveyor, Chelmsford.

APRIL 21.—**Linlithgow.**—PLAYGROUNDS.—For the tar macadamising of certain school playgrounds, for the Education Authority. Mr. Edward Blades, Executive Officer, Education Offices, Bathgate.

APRIL 21.—**Port Talbot.**—ROAD.—For widening of the Cwmavon-road, together with erection of boundary and retaining walls. Borough Engineer, Municipal Buildings, Aberavon (Glam.).

APRIL 22.—**Bebington.**—ROADS.—For the making up of private street works to College-drive, for the U.D.C. Council Offices, Bebington.

APRIL 25.—**Dunfermline.**—ROADS.—For reconstruction of carriageways and footways in tarmacadam at Townhill Housing Scheme, and Queensferry-road, for T.C. Mr. R. Muir Morton, Burgh Engineer, City Chambers, Dunfermline.

APRIL 25.—**Kilmarnock.**—IMPROVEMENT.—For improvement of insanitary areas, William-street, for the T.C. Mr. William Dunbar, Burgh Surveyor, Market Bridge, Kilmarnock.

APRIL 26.—**Otley.**—ROADS, &C.—For water mains, streets, sewers and drains, Newall Carr-road Housing Scheme, for the U.D.C. Surveyor, Council Offices, Otley. Deposit £3 3s.

APRIL 26.—**Walsall.**—ROADS.—For remaking portion of Watery-lane, for the T.C. Borough Surveyor, Walsall.

APRIL 28.—**Chorley.**—SEWAGE WORKS.—For the construction of sewage disposal works, for the T.C. Messrs. Dodd & Watson, County Chambers, Corporation-street, Birmingham. Deposit £5.

APRIL 28.—**Kempton.**—WATER MAIN.—(*a*) **For laying 7½ miles of cast iron water main; (*b*) for laying 450 yds. of 52 in. steel pipes and contingent works from Kempton to Greenford, for Metropolitan Water Board. Mr. H. E. Stilgoe, Chief Engineer, Offices of the Board, New River Head, Clerkenwell, E.C. 1. Deposit £20.**

APRIL 30.—**Hemel Hempstead.**—ROADS.—For sewering and making up of a private street about 300 yards long for the T.C. Mr. W. R. Locke, Borough Surveyor, Hemel Hempstead, Herts.

APRIL 30.—**Swansea.**—SEWAGE WORKS.—For construction of sewerage works at Llansamlet, for T.C. Mr. J. R. Heath, Chief Engineer, Main Drainage Dept., Guildhall, Swansea. Deposit £5 5s.

NO DATE.—**Grimthorpe.**—RECREATION GROUND.—For the laying-out of recreation ground, &c., at Grimethorpe, near Barnsley, for the Miners' Welfare Scheme. Mr. J. R. Shephard, Surveyor, Council Offices, Cudworth.

✱NO DATE.—**Guildford.**—DRAINS AND ROAD.—Laying in soil and surface water drains and forming a new road for the Nightingale Building Estate. Plans, &c., of the Onslow Building Works, Guildford.

NO DATE.—**Monk Bretton.**—RECREATION GROUND.—For the laying-out of recreation ground, &c., at Monk Bretton, near Barnsley, for the Miners' Welfare Scheme. Mr. J. R. Shephard, Surveyor, Council Offices, Cudworth.

Competitions.

(*See Competition News, page* 572.)

Auction Sales, Tenders, etc.

APRIL 14.—**Gillingham, Kent.**—Mr. F. H. Clark will sell, absolutely without reserve, at Black Lion Fields, Gillingham, Kent, huts and building materials, steel roof principals, window sashes, &c. Auctioneer, Railway Wharf, York-road, Wandsworth, S.W. 15.

APRIL 15 AND 16.—**Bishop's Stortford.**—Messrs. Perry & Phillips, in conjunction with G. E. Sworder & Sons, will sell, on the premises (unless previously disposed of by private treaty), at Hallingbury-place (three miles from Bishops Stortford), interior and exterior fixtures and fittings previous to the demolition of the above mansion. Auctioneers, Bridgnorth and Bishop's Stortford.

APRIL 15.—**Bournemouth.**—Messrs. Hankinson & Son will sell (unless previously disposed of) at the Central Hotel, Bournemouth, *re* Bournemouth and District Builders' Guild, Ltd., in liquidation, Springbourne, Bournemouth, block of freehold property, builders' yard, freehold cottages, &c. Auctioneers, The Square, Bournemouth, and 8, Southbourne-grove, West Southbourne.

✱MAY 6.—**London, W.1.**—Messrs. Knight, Frank & Rutley will sell, in the Hanover-square Estate Room, W.1, freehold, Edgecombe Hall, Beaumont-road, outbuildings, cottages, lodge, &c., in all extending to over 14 acres. Auctioneers, 20, Hanover-square, W.1.

✱APRIL 15.—**London, N.**—Messrs. Charles R. Davis & Co. will sell, under a D.A., *re* F. & F. K. Dainton, by order of the Trustee, at 411, Holloway-road, N., builders', contractors' and decorators' valuable stock-in-trade and plant. Auctioneers, 285, Borough High-street, S.E.1.

APRIL 16.—**Kent.**—Messrs. Knight, Frank & Rutley will sell, at very low reserves, to wind up an estate, at the residence, Otford Court, close to Otford Station (unless previously sold privately), the residential and building property, Otford Court, the whole extending to an area of about 190 acres. Auctioneers, 20, Hanover-square, W. 1.

✱APRIL 29 AND 30.—**Banbury, Oxon.**—Mr. F. H. Clark will sell, without reserve, at Banbury Filling Factory, Central Stores Depot No. 423, timber and building materials accruing from the demolition of the Filling Factory, Banbury, Oxon. Auctioneers, Railway Wharf, York-road, Wandsworth, S.W.18, or of the same firm at the Filling Factory, Banbury, Oxon.

APRIL 28.—**Romford (Essex).**—Messrs. Alfred Savill & Sons will sell by order of the Trustees under the will of Mr. D. McIntosh, (deceased) at Winchester House, Old Broad-street, E.C. (unless previously sold by private treaty) freehold building estate known as Marshalls Park, extending to about 117 acres, at Romford (Essex), adjoining the town. Auctioneers, 69, South Audley-street, Grosvenor-square, London, W.1.

✱APRIL 29.—**Fulham.**—Messrs. Green & Son will sell, at "The Hermitage," 84, Little-road, large quantities of building materials. Auctioneers, 72, King-street, Hammersmith, W.6.

APRIL 30, AND FOLLOWING DAY.—**London, E.C.**—Messrs. Fuller, Horsey, Sons & Cassell in lots at the Merchants' Hall, Baltic Exchange, St. Mary Axe, E.C., contractors' and builders' plant and stock from Tilbury Housing Scheme, by order of Messrs. Trollope & Colls, Ltd., on account of completion of contract. Auctioneers, 11, Billiter-square, E.C.3.

✱MAY 2.—**London, E.C.**—Messrs. Fuller, Horsey & Sons & Cassell will sell by order of C. J. Wells & Sons, Ltd., on account of the completion of the London-Tilbury road contract, at the Merchants' Hall, Baltic Exchange, St. Mary-Axe, E.C., contractors' plant. Auctioneers, 11, Billiter-square, E.C.3.

MAY 6.—**London, W.1.**—**Messrs. Knight, Frank & Rutley, at the Hanover-square Estate Room, situate at Wimbledon Common, within half-an-hour by motor of the Houses of Parliament. Freehold, Edgecombe Hall, Beaumont-road; extensive range of outbuildings, in all extending to over 14 acres. Vacant possession will be given on completion of the purchase. Auctioneers, 20, Hanover-square, W.1.**

MAY 27.—**Near Gerrard's Cross (Bucks).**—Messrs. Knight, Frank & Rutley will sell, by direction of Commander J. A. L. Hay, R.N., freehold agricultural and sporting property, known as Pickeridge Farm, about 171 acres; also about 18 acres of building sites. Auctioneers, 20, Hanover-square, W. 1.

Public Appointments.

✱APRIL 16.—**West Riding of Yorkshire.**—Two quantity surveyors' assistants required in the Quantity Surveyor's Department, by the County Council of the West Riding of Yorkshire. Mr. Louis J. Newton, M.S.A., County Quantity Surveyor, County Hall, Wakefield.

APRIL 19.—**Birmingham.**—Architectural Assistant required in the Public Works Dept. of the Corporation. Mr. H. H. Humphries, M.Inst.C.E., City Engineer and Surveyor. The Council House, Birmingham.

APRIL 19.—**Birmingham.**—Inspector of Housing Contracts required in the Public Works Department by the Corporation. Mr. H. H. Humphries, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham.

APRIL 19.—**Wolverhampton.**—Clerk of Works required to superintend erection and completion of engineering block of new Technical College, Wolverhampton, for the Joint Committee of the Staffordshire County and Wolverhampton County Borough Councils. Director of Education, Wolverhampton, endorsed "Clerk of Works."

✱APRIL 23.—**Wigan.**—Thoroughly qualified Architectural Assistant required in the Borough Engineer's Department by the County Borough of Wigan. Mr. R. B. Donald, M.Inst.C.E., Borough Engineer, Wigan.

✱APRIL 28.—**Swansea.**—Quantity Surveying Assistant required in the Borough Architect's Department by the County Borough of Swansea. Borough Architect, 3, Prospect-place, Swansea.

✱APRIL 28.—**Swansea.**—Clerk of Works required to act under the direction of the Borough Architect for the new elementary school, Town Hill, by the County Borough of Swansea. Borough Architect, 3, Prospect-place, Swansea.

✱NO DATE.—**Halifax.**—Assistant in the Building Trades Department of the Halifax Municipal Technical College required by the Principal. Mr. W. H. Ostler, Secretary of Education, West House, Halifax.

PRICES CURRENT OF MATERIALS *

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	3 19 0
Second Hard Stocks	3 14 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	2 13 3	Best Blue Pressed Staffs.	9 0 0
Do. grooved for plaster	2 15 3	Do. Bullnose ..	9 10 0
Do. Bullnose ..	3 8 3	Blue Wire Cuts	7 0 0

Best Stourbridge Fire brick:—

2½ in.	11 3 0	3 in.....	13 2 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers ..	22 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
		One Side and two Ends ..	31 10 0
Headers.....	21 10 0	Two Sides and one End	32 10 0
Quoins. Bullnose and 4½in. Flats	28 10 0	Splays and Squints	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	2 1	3 in. per yd. super	2 11
2½ in. „	2 6	4 in. „	3 6

	s. d.	
Thames Ballast	10 6	per yard.
Pit Sand	14 9	„ „
Thames Sand	15 6	„ „
Best Washed Sand.....	15 6	„ „
½ in. Shingle for Ferro-Concrete	14 0	„ „
¾ in. „ „	15 0	„ „
¾ in. Broken Brick.....	10 6	„ „
Pan Breeze	5 6	„ „

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement, British Standard Specification Test £2 18 0 to £3 51/- alongside at Vauxhall in 80-ton lots.	£3 3 6
Ferrocrete per ton extra on above.....	0 10 0
Super Cement	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White.....	5 15 0
„ „ Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
„ „ White	3 12 6
„ Fine	5 12 0
Sirapite, Coarse	3 9 0
„ Finish	3 17 0
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime.....	2 13 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube.....	2 11½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube.....	4 4
Do. do. delivered on road wagons at above stations, per ft. cube.....	4 5
White basebed, 3d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ¼d. beyond 30 ft.

HOPTON-WOOD STONE.

Delivered at any Goods Station, London.	
Small random blocks, up to 10 ft. cube. Per ft. cube	7/-
Random blocks from 10 ft. and over „	17/-
Sawn two sides „	27/-
Sawn three or four sides „	32/-

YORK STONE, BLUE—*Robin Hood Quality.*

	s. d.
Delivered at any Goods Station London.	
4 in. sawn two sides landings to sizes (under 30 ft. super.)..... Per Ft. Super	5 3
6 in. rubbed two sides, ditto..... „	5 9
3 in. sawn two sides slabs (random sizes) „	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... „	1 5½
1½ in. to 2 in. ditto, ditto ..... „	1 3

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks.....Per Ft. Cube	5 6
6 in. sawn two sides landing to sizes (under 40 ft. super.).....Per Ft. Super	5 4½
6 in. rubbed two sides ditto ..... „	6 0½
4 in. sawn two sides slabs (random sizes) „	2 10
3 in. ditto. ditto „	2 5
2 in. self-faced random flags..Per Yard Super	7 11

ARTIFICIAL STONE.

	s. d.
Delivered in London Area in full van loads.	
Plain ..... per ft. cube	6 6
Moulded ..... „ „	7 9
Cills ..... „ „	8 3

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£34 0	3 × 6	£25 0
4 × 9	32 0	3 × 11	31 0
4 × 8	27 0	2 × 11	32 0
4 × 7	27 0	3 × 9	30 0
3 × 8	25 10	2½ × 9	30 0
3 × 7	25 10	3 × 4½	25 0
2½ × 7	25 0	3 × 4	25 0

WOOD (*Continued*).

PLANED BOARDS.

1 × 11	£36 0	1 × 9	£34 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	21/-	1¼	33/6
¥	23/-	1½	38/6
1	26/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	26/-
1¼	33/6
1½	38/6

MATCHINGS (BEST).

Inches	per sq.
¾	17/6
¾	21/-
1	26/-

BATTENS

Inches	s. d.
¾ × 2	2 6 per 100 ft.

SAWN LATHS.

Per bundle	0 2 9
Dry Wainscot Oak. per ft. super, as inch	0 2 0 to 0 2 6
¼ in. do. do.	0 1 6 to 0 2 0
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 1 9 to 0 2 6
Cuba Mahogany	0 3 0 to 0 3 6
Teak (Rangoon, Moulmein or Java), per load	45 0 0 to 50 0 0
American Whitewood planks, per ft. cube ..	0 14 0 to 0 16 0
Best Scotch Glue, per cwt.	4 10 0 to —
Liquid Glue, per cwt. ..	4 7 0 to 5 10 0

SLATES.

1st quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12.....	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9.....	18 12 6
22 by 11.....	31 5 0	16 by 10	17 12 6
20 by 12.....	29 15 0	16 by 8	13 15 0
20 by 10.....	25 12 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 7 6
Ditto hand made ditto	5 12 6
Ornamental ditto	5 17 6
Hip and valley tiles (per dozen) { Hand made	0 9 6
Machine made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	13 10 0
Plain Compound Girders	15 10 0
„ Stanchions	17 10 0
In Roof Work	20 10 0

MILD STEEL ROUNDS.
To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	16 10 0	⅝ in. to ½ in...	13 10 0
⅜ in.	14 10 0	⅝ in. to 2½ in...	13 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Gas	52½%	52½%	62½%
Water	47½%	47½%	57½%
Steam	42½%	42½%	52½%
Galv'd—			
Gas	37½%	42½%	52½%
Water	31½%	37½%	47½%
Steam	25 %	32½%	42½%

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.....	1/1½	11d.	3½d.
3½ in.	1/2½	1/0½	3½d.
4 in.....	1/4	1/1½	3½d.
4½ in.	1/5½	1/4	4d.
5 in.....	1/7½	1/5½	5d.

O.G. GUTTERS.

3 in.....	1/6½	1/2½	3½d.
3½ in.	1/8½	1/2½	3½d.
4 in.....	1/7½	1/4	3½d.
4½ in.	1/9½	1/6½	4d.
5 in.....	2/1½	1/9	5d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/7½	1/1½	1/8
2½ in. „	1/9½	1/4	2/0½
3 in. „	2/1½	1/8	2/5½
3½ in. „	2/6½	1/11½	2/10½
4 in. „	2/11½	2/4½	3/5½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6fts plain	3 0½	2 2½	2 8
2½ in. „	3 6½	2 5½	3 3½
3 in. „	4 2½	2 8	4 0½
3½ in. „	4 7	3 3½	4 8½
4 in. „	5 1	3 9½	5 5

L.C.C. COATED DRAIN PIPES—London Prices ex works.

	Pipe.	Bends, stock angles.	Branches stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 9	5 8	8 10
4 in. „ „	6 3	6 8	11 4
5 in. „ „	7 6	11 6	18 2
6 in. „ „	8 10	14 4	23 5

	Per ton in London. £ s. d.		£ s. d.
IRON— Common Bars.....	13 10 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 0 0	..	15 0 0
Staffordshire "Marked Bars"	17 0 0	..	18 0 0
Mild Steel Bars	12 10 0	..	13 10 0

METALS (*Continued*).

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	13 0 0	..	14 0 0
Hoop iron, basis price	16 10 0	..	17 10 0
„ Galvanised	31 0 0	..	32 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g...	15 0 0	..	16 0 0
„ „ „ 24 g...	16 0 0	..	17 0 0
„ „ „ 26 g...	18 0 0	..	19 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g...	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.....	22 10 0	..	23 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g...	24 10 0	..	26 10 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	24 0 0	..	25 0 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ..	23 10 0	..	24 10 0
Best Soft Steel Sheets, 22 g. and 24 g. ..	24 10 0	..	26 10 0
Best Soft Steel Sheets, 26 g.	26 0 0	..	27 0 0
Cut Nails, 3in. to 6 in. (under 3in. usual trade extras.)	20 10 0	..	22 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet. English, 4 lb. and up	45 10 0
Pipe in coils	46 0 0
Soil Pipe	49 0 0
Compo pipe.....	52 0 0

NOTE—Country delivery, 30s. per ton extra: lots under 3 cwt., 2s. per cwt. extra and over 3cwt. and under 5 cwt., 1s.6d. per cwt. extra. Cut to sizes, 2s. cwt.extra.

Old lead, ex London area, at Mills ..... per ton	32 0 0	..	—
Do., ex country, carriage forward ..... per ton	33 0 0	..	—

PLUMBERS' BRASS WORK.
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2in.
7/6	11/6	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F

½ in.	¾ in.	1 in.	1½ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps ..	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps ..	35/-	45/-	66/-	126/- „

COPPER—	£ s. d.		
Strong Sheet ....per lb.	0 2 3	..	—
Thin „ .... „	0 2 4	..	—
Copper nails .... „	0 2 3	..	—
Copper wire .... „	0 2 4	..	—
TIN—English Ingots „	0 2 10	..	—
SOLDER—Plumbers' „	0 1 3	..	—
Tinmen's ..... „	0 1 5	..	—
Blowpipe ..... „	0 1 7	..	—

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes .....per gallon	0 3 8
„ „ „ in barrels .... „	0 3 10
„ „ „ in drums .... „	0 4 1
Boiled „ „ in barrels .... „	0 4 1
„ „ „ in drums .... „	0 4 4
Turpentine in barrels ..... „	0 6 9
„ in drums (10 gall.) .. „	0 7 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	59 0 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Spedol" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	82 5 0
Red Lead, Dry (packages extra)....per ton	54 10 0
Best Linseed Oil Putty.....per cwt.	0 16 0
Filocol .....per cwt.	0 15 6
Size, XD Quality.....fkn	0 3 —

[Concluded on next page.]

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz.	fourths.... 3½d.	32 oz. fourths.....	8½d.
15 „	thirds .... 4½d.	32 „ thirds	10½d.
21 „	fourths .. 5d.	Obscured Sheet, 15 oz.	4d.
21 „	thirds .... 6½d.	„ „ 21 „	5½d.
26 „	fourths .. 6d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 „	thirds .... 7½d.	En'lled 15oz. 5½d., 21oz.	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
Rolled plate	4½d.
Rough rolled	5½d.
Rough rolled	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best Ditto	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 6
Hard Drying Oak	ditto	0 18 0
Fine Hard Drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 10 0
Best Black Japan		0 10 6
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 6
Knotting (patent)		1 5 0
French and Brush Polish		0 17 0
Liquid Dryers in Terebine		0 9 0
Outrass Black Enamel		0 7 0

NO DATE.—**Dundee.**—BANDSTAND.—Erection of bandstand at Baxter Park, for the T.C. Particulars from Mr. G. Baxter, City Engineer, 91, Commercial-street, Dundee.

The death took place recently, at Edinburgh, of Mr. Charles S. S. Johnston, architect, aged 74.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND

Dumfries. — LABORATORY. — The Dumfriesshire E.C. has passed plans for the erection of a new science laboratory and art room at George-street School, Dumfries. The estimated cost is £2,200.

Glasgow.—OFFICES.—The Lanarkshire E.C. has decided to purchase offices in Glasgow for its headquarters, which are to be transferred from Hamilton. The cost is £65,750.

Portobello.—CLOAKROOMS.—The Edinburgh Corporation Cleaning and Lighting Committee has decided that provision should be made for the erection of lavatories and cloakrooms at Bath-street, Portobello, in the ensuing year's estimate. The probable cost is £2,500.

Aberdeen.—SHELTER.—The Corporation Links and Parks Committee has decided to erect a shelter and lavatory at the Bay of Nigg, the former to cost £120 and the latter £390. The question of erecting a bandstand at the bathing station will again be considered when a report is received from the B.S.

Fallin.—HOUSES.—The Kirk Session of Bannockburn has decided to build a house at Fallin for the missioner. The Stirling Presbytery has given their consent.

Plean.—MANSE.—The Presbytery of Stirling submitted plans for the manse which is proposed to be erected at East Plean. The Presbytery remitted the plans to a committee with powers.

EDINBURGH HOUSING

At Edinburgh Town Council recently Mr. Whitson, convener of the Housing and Town-Planning Committee, moved approval of a recommendation of the committee that the erection of 1,000 houses be proceeded with at Lochend. The number of new houses to be provided on the Lochend estate in respect of slum clearances was estimated at 300 for the Cowgate-Grassmarket area and 400 for Leith areas. The Board of Health had required that 250 be two-apartment houses and 750 three-apartment houses. In all cases a scullery, bath, and other conveniences were provided additional to the prescribed number of apartments. The system of building was various forms of concrete, including duo-slab. He moved acceptance of tenders. Mr. Mancor moved that they delay the scheme until they obtained a financial report from the City Chamberlain as to the city's past and proposed commitments in housing. Mr. Hay moved another amendment that they only proceed to erect 500 of the cheaper houses. On a vote Mr. Whitson's motion was adopted.

PRINCES STREET BOULEVARD

THE proposal to form a terrace on the south side of Princes-street, between the West End and the Mound, came before Edinburgh Town Council recently.

Lord Provost Sleigh moved approval of the recommendation of his Committee for no action on the proposal. They had such a magnificent heritage in Princes-street, he said, that they would be failing in their duty if they did not give any proposal materially affecting Princes-street their most anxious and careful consideration. He had been unable to discover any good ground for urgency in the matter. Princes-street could not be said to require any widening at that part. The most urgent problem at the present time was to secure the removal of the steps in front of the Royal Scottish Academy at the Mound. If it could enhance the attractions of Princes-street they would not grudge the money, but apart from differences of opinion on that point it was well to bear in mind that in a time of financial difficulty they had a good many large schemes in hand—housing, removal of slums, and expensive road schemes. No doubt the scheme would employ a number of unskilled men, but a considerable proportion of skilled men would require to be employed. Even on the ground of unemployment, however, considering the other schemes they had undertaken, including the Edinburgh-Glasgow road, the terrace scheme could not be described as urgent.

Mr. Sawers, in seconding, said that they were asked to spend £50,000 unnecessarily.

Mr. Douglas Elliot said the strength of a chain was its weakest link, and the capacity of Princes-street was limited by the neck of Hanover-street. To widen the street west of that would be futile. The Lord Provost's suggestion that the steps should be removed was a step in the right direction, but it did not go far enough. The only thing to cure the situation was to remove the Royal Scottish Academy buildings altogether.

On a vote being taken, the Lord Provost's motion for no action was carried by 44 votes to 18.

At the end of the meeting notice of motion was given by the Lord Provost, seconded by Mr. Matthew White, that it be resolved to make representation to His Majesty's Government urging that immediate action be taken with a view to the removal of the steps in front of the Art Gallery at the Mound.

Housing Position in Scotland.

Mr. Stewart, Under-Secretary to the Scottish Board of Health, informed Sir G. M'Crae that the Board had approved, under the Act of 1923, the erection by local authorities of 6,820 houses, for 1,943 of which tenders had been accepted; 611 were under construction and 8 had been completed. As regarded private enterprise, the number of houses for which Certificate "A" had been issued was 1,779; 865 were under construction, and 29 had been completed.

Answering Lord E. Percy, Mr. Stewart said he thought something like 6,000 "Addison" houses were still under construction in Scotland.

Mr. D. G. Somerville: Is it not a fact that the majority of the "Addison" houses are under repair?—No answer was given.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Mason...	Brick layers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Brick-Masons'	Plasterers' Labourers.
Aberdeen	1/7½	1/8½	1/7½	1/8	1/7½	1/7½	1/4½	1/0½	
Airdrie	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Alexandria	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½	
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1½	
Ayr	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/6½	1/2½	
Bathgate	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/1½ to 1/2½	
Blairgowrie	1/7½	—	1/7½	1/7	1/7	1/7	1/6½	—	
Bo'ness	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Coatbridge	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Dumbarton	1/7½	1/7½	1/7½	1/8	1/7½	1/7½	1/6½	1/2½	
Dumfries	1/5	1/5	1/5	1/6	1/5½	1/6	1/5½	1/1 to 1/1½	
Dundee	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Dunfermline	1/7½	1/7½	1/7½	1/8	1/7½	1/7½	1/6½	1/2½	
Edinburgh	1/7½	1/7½	1/7½	1/8	1/8	1/7	1/6½	1/2½	
Falkirk	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/5½	1/2½	
Fort William	1/7½	1/6½	1/6½	1/7	1/6	1/6	1/6½	1/2	
Galashiels	1/5½	1/5½	1/5½	1/6	1/5½	1/5½	1/6	1/1½	
Glasgow	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Greenock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/5½	1/0 to 1/2½	
Hamilton	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Hawick	1/5½	1/5½	1/5½	1/6	1/5	1/5	1/5½	1/2	
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/8	1/7½	1/6½	1/2½	
Inverness	1/4	—	1/3½	1/4	1/4½	1/4	1/3½	10½d to 1/2½	
Kilmarnock	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Kirkcaldy	1/7½	1/7½	1/7½	1/8	1/7½	1/7½	1/6½	1/2½	
Kirkwall	1/4½	1/4½	1/3½	1/4	1/4½	1/4	1/3	1/0	
Lanark	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/5½	1/2½	
Leith	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Motherwell	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Perth	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Stirling	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Stirlingshire (Eastern District)	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Wishaw	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 608.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	6
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	35	0
Add if in underpinning in short lengths	" "	7	6
Add if in floors 6 in. thick	" "	3	6
Add if in beams	" "	4	0
Add if aggregate 1 : 2: 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	3

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	2	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	1
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	9	0
¾ inch on flats in two thicknesses	" "	6	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	3

MASON.

		s.	d.
York stone templates fixed	per foot cube	12	6
York stone sills fixed	" "	21	6
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	19	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	3
Do. joists	" "	5	9
Do. roofs, floors and partitions	" "	6	3
Do. trusses	" "	8	3

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	38/-	44/-	50/-	80/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	4
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/8	1/9	2/0
Deal shelves and bearers	"	1/5	1/7	1/10
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	64	0
Do. Do. in flats	"	62	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/11	2/2	3/10	4/7	
Do. service	"	1/10	2/5	2/10	4/3		
Do. soil	"						7/6
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	2
Do. Do. Sirapite	" "	2	4
Do. Do. Keen's	" "	3	3
Add sawn lathing	" "	1	5
Add metal lathing	" "	2	3
Portland cement screed	" "	1	10
Do. plain face	" "	3	0
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	9
26 oz. Do.	" "	1	1
Obscured sheet	" "	1	3
¼ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	11
¼ in. wired cast plate	" "	1	5

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10 % on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS & OTHER WORKS *

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; and B.E. for Board of Education.

ABERDARE.—Plans passed: Villa at The Grove, for Mr. D. Cope Harris.

ACCRINGTON.—Sanction has been received from the M.H. for the erection of an additional 103 houses on the Corporation's Laneside Estate. The C.W.S. have quoted terms upon which they would be prepared to build, and a small committee has been appointed to negotiate.

ASHINGTON.—The U.D.C. are to proceed with a new sewerage scheme, comprising the laying of a main outfall sewer between four to five miles in length, from Ashington and Hurst, to the sea, at a point south of Newbiggin Point. The estimated cost is £110,000, and in the scheme, prepared by Messrs. Taylor & Wallin, engineers, of Newcastle, the work is divided into three contracts.

AUDENSHAW.—Plans passed by U.D.C.:—Semi-detached houses, junction of Stamford-road and Corporation-road, for Rough Cast Building Co.

BARNSTAPLE.—The T.C. has received authority from the M.H. for the erection by private enterprise of a further 30 houses. The Housing Committee has decided to invite tenders for a further 13 houses, and have instructed the Surveyor to ascertain whether any builder or builders will be willing to erect a further block of houses on the Newport site and upon what terms.

BATH.—The T.C. has approved plans for the erection of a new Post Office in Northgate-street and New Bond-street.

BELFAST.—Plans passed. Five houses, Irwin-drive, for S. Duffin; store, Nelson-street, for R. Craig & Sons, Ltd.; four houses, Ballygomartin-road, for Wilson, Cousin & Co., Ltd.; shops, offices and warehouse, King-street, for John Adams; two houses, Ravenhill Park-gardens, for N. B. Kilpatrick; 16 houses, Maryville Park, for A. McDowell; house and dance hall, Lisburn-road and Malone-avenue, for Miss A. L. Foster and Miss A. E. Taylor; four houses, Broadway, for W. J. Ervine; five houses, Newtownards road Upper, for J. Robinson; two houses, Grasmere-gardens, for T. McCullough; house, Sans Souci Park, for Miss K. Macrory; conversion of stables and stores into houses, Holywell-road and Station-road, for the Dixon Estate, Ltd.; conversion of shop into two shops, Shankill-road, for A. H. Newell; 18 houses, Belmont-avenue, for F. Mulligan; 10 houses, Victoria-gardens and Tokio-gardens, for Wm. McKay; 18 houses, Hillsborough-drive, for T. McKee & Sons; four houses, Irwin-drive, for J. H. Barton; nine houses, Stranmillis-road and Lockview-road, for W. Clark; eight houses in Glandore-street and Glanworth-drive, for H. Turtle; shop and house, Trillick-street, for Macardle, Moore & Co., Ltd.; four houses, Ailesbury-road, for W. Johnston; two houses, Oldpark-road, for H. & J. McKibben; lecture hall, Lockview-road, Harleston-street, for committee of Fisherwick Presbyterian Church; re-building school, Richardson-street, for Rev. Canon G. Crolly, P.P.; eight houses, Oldpark-road, for J. Carson & Sons; four houses, Taunton-avenue, for S. Ewing & Sons, Ltd.; two houses, Ebrington-gardens, for J. S. Gillespie; 10 houses, Willowbank-street, for J. Kyle; 12 houses, Sagimor-gardens, for H. Mills; two houses, Cregagh-road, for D. L. Cronne; house, Donegall Park-avenue, for J. McConkey; house, Bawnmore-road, for W. B. R. Joy; conversion of two houses into two shops and houses, Donegall Pass, for H. Reid; stores, Ballarat-street, for Greenhill & Craig, Ltd.; two houses, Wandsworth-gardens, for R. O. Templeton; 13 houses, Haypark-avenue and Ailesbury-road, for H. & J. Martin, Ltd.; 17 houses, Onslow-gardens, for H. & J. Martin, Ltd.; four houses, Ebrington-gardens, for J. Moore; four houses off Belmont-road, for J. McMaster & Sons; two houses, Stranmillis-road, for J. & A. D. Shortt; 18 houses, Kerrsland-crescent, and drive, for R. Hewitt; two houses, Luxor-gardens, for J. McMillan; conversions of shops and dwelling into shops and offices in Donegall-road and Dublin-road, for M. Hunter and C. Nugent.

BEXHILL.—The Chamber of Trade has passed a resolution urging on the T.C. to proceed with a scheme for an entertainment hall on the coastguard site.

BISHOPS STORTFORD.—Plans passed by U.D.C.: Three cottages in South-road, for Mr. E. Markwell; four in South-road, for Mr. A. N. Mercer; and one in South-road, for Mrs. E. Reeves.

BLACKBURN.—Plans passed by T.C.: Sub-station, Wensley-street, by the Electricity Department; boiler-house, Lune-street, by Mr. John Smethurst; bungalow, Arterial-road, by Mr. John Whalley; four houses, Heys-lane, by Messrs. H. Duckworth & Son.

BODMIN (CORNWALL).—The U.D.C. has decided to apply to the M.H. for sanction to erect a further ten houses.

BOURNEMOUTH.—A scheme of extensions to cost about £50,000 has been agreed on, for the Royal Victoria and West Hants Hospital.

BOSTON (LINCS).—The T.C. have approved of plans for the erection of a new electric power station near the docks, to be erected by the Boston and District Electric Light Co., Ltd.

BRAMPTON.—Plans passed by R.D.C.: House in Tree-road, for Mr. Geo. Park, architect Mr. T. T. Scott (Carlisle); bungalow, How Mill, Messrs. Ridley, for Mrs. Fitz.

BRIGHTON.—A sub-committee is to consider a tidal bath project, recommended by the Works Committee.

BRYNMAWR.—The Breconshire E.C. has decided to expend £200 in extending the Physics Laboratory at Brynmawr County School.

BURNLEY.—Plans passed by T.C.:—Two houses, Rock-lane, by Mr. J. Nuttall; six houses, Moseley-road, by Mr. J. Nuttall; four houses, Queen's-road, by Messrs. Butson, Clegg & Holdsworth.

BUXTON.—Plans passed by T.C.: Messrs. W. & E. T. R. Bradbury, two detached houses, Green-lane; Mr. B. S. Meek, house, Macclesfield-road; Mr. M. E. Kershaw, house, Green-lane; Mr. J. H. Bowden, house, Green-lane.

CHACEWATER (CORNWALL).—The inhabitants propose to erect a public hall for the village and neighbourhood, and it is to be decided whether it will be a concrete or wooden building.

CHELMSFORD.—Plans for a new infirmary and nurses' block to be erected to the south of the present infirmary at the Guardians' Institution have been approved by the Board.

CONSETT.—The U.D.C. have received the sanction of the M.H. for the building of 106 additional houses. It has been agreed to borrow £27,771 for building purposes.

CORK.—At a meeting of the Council to consider the question of taking steps to erect municipal offices to replace the destroyed City Hall, it was decided to proceed with the erection of the Anglesea street portion of the new buildings, which will house the staff and also provide a Council Chamber.

DARLINGTON.—The T.C. have approved the following plans:—Ten houses, Bowman-street, for W. E. Moody; house, Mildred-street, for Messrs. W. W. Lee & Son; two houses, Pierremont-gardens, for J. E. Chilton; house, Linden-avenue, for A. Marshall; new street, continuation of Milner-road and Leafield-road South (back), for Clark & Moscrop.

DEERNESS.—The Deerness Aged Miners' Homes Committee (County Durham) are negotiating for land at Quebec Drill Hall, for the purpose of erecting 12 homes.

DEWSBURY.—Plans passed by T.C.: Bungalow, Field-lane, Ravensthorpe, for Mr. C. Brook; shop premises, Queensway, for Mr. Salinsky; house, Leeds-road, for Mr. A. Ross; warehouse, Bank Top, for Messrs. Thomas Porritt & Sons; house, Wakefield-road, for Mr. F. Bannister. An electricity sub-station is to be erected at Bank Top.

DOVER.—The Housing Committee of the T.C. have decided to erect 63 more houses. The houses are to be built at Dodd's-lane, Buckland (16), Goschen-road, Tower Hamlets (17), Astor-avenue, Tower Hamlets (20), and Buckland Housing Estate (10).

DUNDEE.—Plans and sections of proposed new buildings, &c., lodged at the Office of the City Engineer: Byron-street, warehouse, for Francis Stevenson & Sons, Ltd.; Park-road, bungalow, for the Misses Findlay; Seagate, fire-escape stairway, for John Robertson & Son, Ltd.; Seagate, fire-escape stairway, for Tay Bonding Co., Ltd.; Yeaman Shore, warehouse, &c., for Peebles Bros., Ltd.

DURHAM.—The R.D.C. has decided to erect 16 houses each at Bearpark and Ludworth, and 14 each at Ushaw Moor and Pity Me. The C.C. has decided to erect a new bridge over the River Derwent, the Winlaton Mill Railway and Shotley Bridge turnpike. The estimated cost is £60,000.——Plans passed by T.C.: Mr. F. Stonebridge, bungalow, Sunderland-road; Mr. F. Beevers, six houses, Kepier-terrace.

EASINGTON.—The R.D.C. has agreed to the recommendations of the appointed committee for the completion of the road from Haswell Plough to Thornley *via* Ludworth. Each of the respective Councils to bear its own share of the cost.

EAST LOTHIAN.—At a meeting of the East Lothian Western District Committee, reference was made to the applications which had been submitted for subsidies in respect of building houses by private builders. Of the scheme of 300 houses authorised, 242 had been taken up. The Edinburgh Collieries Company proposed to erect 48 houses at Tranent and 160 at Preston for their miners. The Council agreed to make advances of £60,000 on the valuation of these houses.

EDINBURGH.—Warrants granted by Dean of Guild Court: R. Middlemass & Son, Ltd., biscuit manufacturers, for reconstruction work at the scene of the recent fire at their premises in Causewayside; David Andrews, motor garages at 13, Craiglea-drive; Eli Brown, bungalow in Saughton-road, Corstorphine; Niddrie and Benhar Coal Co., Ltd., tenement of four houses at Newcraighall; R. Noel Oswald, bungalow and garage Alnwick Hill-road; William R. Ovens, bungalow, Boraston-Knowe, Blackhall; George Roberts, two double villas, Ravelston Dykes; Dr. L. Thatcher, convert house into two separate houses at 8, Melville-crescent; D. C. White, convert house into three separate houses at 33, Buckingham-terrace; Oldrieve, Bell & Paterson, bungalow, Lanark-road, Kingsknowe. —The T.C. has approved of a scheme for clearing the slums in Cables Wynd district, at a cost of £386,000. Six hundred and twenty-two houses will be dealt with.

EPSOM.—The Cottage Hospital extension scheme is estimated to cost £6,000.

FAREHAM.—Plans passed by U.D.C.: Mr. J. Bowron Baker, house, Hill Park; Mr. George Rampton, two houses, Gosport-road.

FALKIRK.—Dean of Guild Court has passed plans, on the application of the Union Bank of Scotland, Ltd., Ingram-street, Glasgow, for the conversion of two shops in Vicar Chambers, Vicar-street, Falkirk, into bank premises.

FLEETWOOD.—The R.D.C. has made application for sanction to borrow £25,045 for the construction of open-air baths and development of the foreshore, and in this connection a M.H. enquiry has been held, at which there was no opposition.

GLAMORGAN.—The Senghenydd Local Welfare Committee is to receive a preliminary grant from the Miners' Welfare Fund of £2,000 to £3,000 and will proceed to lay out recreation grounds.—A petition has been presented by the Ynysybwl district inhabitants to the B.E. asking that a new higher education central school be set up there.

GUILDFORD.—The M.H. has sanctioned a loan of £25,500 for the erection of 58 houses in Guildford Park.

GUISELEY.—The local Baptists are raising funds for the erection of a proposed new church, at an estimated cost of £4,000.

HASTINGS.—Plans passed by T.C.: House, Old London-road, for H. J. Richardson; two houses, Downs-road, J. Hunt architect, for J. Brown; conversion of stables to houses, Harold-road, P. H. Oxley architect, for W. Goodwin; four cottages, Red Lake, H. Coussens architect, for T. F. Smith; four houses, Canute-road, J. Hirst architect, for A. Small & Sons; villa, Adelaide-road, for C. Walton; four houses, H. J. Richardson architect, for H. Harvey; four houses, Victoria-avenue, D. B. Sceats, for Maidwell & Emerton.

HEBBURN.—The St. John Ambulance Brigade and Nursing Division are to erect a headquarters at a cost of about £2,000.

HORBURY.—Plans passed by U.D.C.: Shop, Northfield-lane, for Mr. Wood; two houses, Regent-street, for Mr. R. Hemingway; two houses, Rayner-street, for Mr. J. Dyson.

HOVE.—The T.C. has had under discussion the construction of an artificial lake and bathing pool.

KIRKCONNEL.—The Sanquhar and Kirkconnel Collieries, Ltd., are forward with a scheme to erect 100 houses at Kelloholm, Kirkconnel.

KIRKINTILLOCH.—The Dean of Guild Court has passed plans for the erection of a Miners' Welfare Institute. The building is to be erected in Industry-street. The total cost, including purchase of ground, is estimated at about £5,000.

LEEDS.—The T.C. has approved of subsidies in respect of the following houses: Mr. G. M. Robertson, two houses, Grove Hall-drive, Beeston; Mr. W. Stockdale, house, Edmonton-place, Chapel Allerton Hall Estate; Mrs. S. J. Bradley, house, Edmonton-place, Chapel Allerton Hall Estate; Mr. A. W. Overton, house, Edmonton-place, Chapel Allerton Hall Estate; Mr. R. C. Burrows, house, Edmonton-place, Chapel Allerton Hall Estate; Mr. T. H. Worsick, house, Edmonton-place, Chapel Allerton Hall Estate; Mr. W. A. Dyson, house, Edmonton-place, Chapel Allerton Hall Estate; Mr. Alfred Booth, eight houses, Barkly-road, Beeston; Mr. G. W. B. Tallant, house, Grove Hall-drive, Beeston; Mr. J. W. Dawson, house, Grove Hall-drive, Beeston; Mr. S. Auty, house, Grove Hall-drive, Beeston; Mr. P. Tempest, house, Grove Hall-drive, Beeston; Mr. Thomas Armitage, bungalow, Armley Ridge-road; Mrs. Ann Stirling Simpson and Mr. Thomas Wright, two houses, Sandiford-terrace, Manston, Cross Gates; Messrs. A. Roddy & Sons, 12 houses, Old-lane, Beeston; Mr. A. S. Wadsworth, two houses, Butt-lane, Farnley; Mr. J. B. Johnson four houses, Roman-view, Roundhay.

LITTLEHAMPTON.—A committee has been appointed to report to the Harbour Commissioners on the steps to be taken in connection with the harbour works.

LINLITHGOW.—A scheme is on foot for the provision of a public institute for the town. A committee has been appointed to prepare details.

LISKEARD.—The T.C. Waterworks Committee has decided to proceed at once with the laying of a new pipe from Culverland to Looedown, at an estimated cost of about £211.

LONDON (CAMBERWELL).—Block of shops with billiard hall over, corner of Peckham Rye and Nunhead-crescent, for Dowton & Co.; rebuilding of 50 New Church-road, for P. A. Hamilton; shop buildings, 37 to 57, Peckham Rye, for G. Trotman; building, 2, Middle-street, for F. J. Wallis.

LONDON (LEWISHAM).—Plans passed by B.C.: R. J. Aitchison, two houses, Elsinore-road, and two Woolstone-road; W. F. Ball, three houses, Bonfield-road; J. Garrett & Son, Sunday School and Institute, Brownhill-road; H. W. Laxton, two houses, Cranston-road; T. H. Sawyer & Son, house, Belmont Hill; H. R. Wall, 12 houses, Bellingham-road,; J. Francis, two houses, Belmont Hill; E. Douglas Selway, 11 shops with flats over, Randlesdown-road.

LUTON.—Plans passed by T.C.: N. Hill, house, Mansfield-road; C. Jeyes, house, Arundel-road; Mrs. A. M. Schœppler, shop, Castle-street; Luton Suburban Estates, Ltd., making road, Carlton-crescent; Buckingham & Long, villa, New Bedford-road; H. C. Dimmock, two houses, Alexandra-avenue; A. Cole, Ltd., twelve houses, Richmond-hill; A. Catlin, four houses, Biscot-road; A. Tate, house, Lincoln-road; G. Kingham & Sons, house and shop, Biscot-road; J. Snoxell, two houses, Dunstable-road; Mrs. S. A. Taylor, five houses, Turner's-road; W. J. Wells, four houses, Lincoln-road; P. Wright, house, Biscot-road; P. & A. Chapman, four houses, Carlton-crescent.

MANCHESTER.—Plans passed: Two houses, Butler-street, Gorton; two houses, Seymour-avenue, North-road, Clayton; shop and offices, Nos. 60A and 60B, Oldham-street; 14 houses, Hill-lane, Blackley; two shops and houses in lieu of two houses, Beaver-road and Veronica-road, Didsbury; four houses, Lindsay-road, Devon-avenue and Paignton-avenue, Burnage; four houses, Cotton-lane, Withington; rebuilding of brass foundry, Crown-street and Southern-street, Hulme; synagogue, Lansdowne-road, West Didsbury; house, 8t. Brannock's-road, Chorlton-cum-Hardy; house, 8t. Werburgh's-road North, Chorlton-cum-Hardy; house, Withington-road, Chorlton-cum-

Hardy; lock-up shops, Denmark-road, Chorlton-upon-Medlock; conversion of house into shop and house, 26, Moss-lane West and Bishop-street, Moss Side; conversion of house into shop and house, 22, Ashton New-road, Beswick; shipping warehouse, Aytoun-street, Bloom-street, and Auburn-street; cabinet factory, Sherborne-street, Cheetham; rebuilding of premises, King-street and South King-street; shops and offices, South King-street, Bow-street, and Ridgefield; rebuilding of church, Palatine-road, Withington.—Plans passed by the Corporation: T. Rushworth, conversion of one house into two houses, Bennet-street, Crumpsall; H. Busker, six houses, Castlebury-road and Cavendish-road, Chorlton; E. Leech, eight houses, Polruan-road and Kensington-road, Chorlton; W. Longfield, two lock-up shops, Claremont-road, Rusholme; H. P. Davies, eight houses, Kensington-road and Rippendale-avenue, Chorlton; Roughcast Building Co., 188 houses, Parrs Wood-drive, Parrs Wood-avenue, Park-avenue, Rectory-avenue, Cedar-road, and Cedar-avenue, Didsbury; Manchester & Salford Co-operative Society, four houses, Birch Hall-lane and Thoresway-road, Rusholme; H. O'Neill and H. C. Barkwort, two houses, Parsonage-road and Alan-road, Withington; Salvation Army Authorities, meeting hall, Osborne-road, Harpurhey; H. Bradshaw, six houses, Hill-lane, Blackley; G. W. Pendlebury, two houses, Seymour-avenue, Clayton; Mrs. H. H. Gaffney, two houses, Ryebank-road, Chorlton-cum-Hardy.

Merthyr Tydfil.—Plans passed by B.C. are as follows:—Villa at The Grove, for Mr. D. Cope Harris. The Merthyr Labour Club and Institute wish to alter the boundary wall of the grounds of Court House and build a new entrance. A sub-committee of the B.C. has been appointed to co-operate in this work.—The Public Works Committee proposes to expend £2,400 in widening the Talbach-road, Pentrebach.—The Parks Committee proposes to spend £3,650 on improving Cyfathfa Park.

Methley.—It is proposed to reconstruct the roof of the chancel of the Methley Parish Church and the east end. It is further proposed to build a permanent vestry.

Mexborough.—The M.H. held an inquiry into the U.D.C.'s application to borrow £3,000 for the replacing of old and choked water mains, and £1,750 for the installation of a bore-hole pump.

Mirfield.—Plans have been approved for the erection of an electricity sub-station at Old Bank-road, for the Yorkshire Electric Power Co., Ltd.

Monmouthshire.—The Ynysddu Building Club is to erect 20 houses.—The Bedwas and Machen U.D.C. is to erect a sub-transmission station at Machen.—The Bedwellty U.D.C. proposes to build a new road from Markham to Bedwellty.—The Caerleon U.D.C., as a result of public inquiry held by the M.H., has received sanction to complete a £2,000 drainage scheme subject to an undertaking being given to join in with the main drain of proposed new Eastern Valleys drainage scheme if this eventuated.

Morpeth.—The R.D.C. have approved plans submitted by the Cowpen Coal Co., Ltd., for the erection of 44 houses at North Seaton.

Newport (Isle of Wight).—Plans passed by T.C.:—Two houses, Carisbrooke-road, Messrs. Stratton & Millgate, architects for Mr. C. E. Bunce.

Newport (Mon.).—Plans have been submitted to the B.C. for the widening of a stretch of Shaftesbury-street to Mill-street. The alternate schemes are for (*a*) a roadway 50 ft. wide, and (*b*) 60 ft. wide, at respective estimated costs of £10,400 and £14,100. The Parliamentary Committee recommends the Council to adopt the bigger scheme.

Norham.—Bungalow, Etal-road, for Mr. J. H. Lyall.

Ossett.—Plans have been approved for the erection of extensions at the Grammar School, including increased gymnasium accommodation, at an estimated cost of £3,700. The local Education C. have been notified by the B.E. that they are prepared to consider the proposal for the erection of a new school at Gawthorpe.

Oxford.—Plans passed by T.C.: B. Blackwell, 1, Frenchay-road, house, Northmoor-road Extension; Mrs. A. T. Lucas, 34, Minster-road, house, Hill Top-road; Balliol College, two houses, Mansfield-road; Mr. C. Wright, 45, Norfolk-square, W. 2, three houses, Northmoor-road Extension and one Manor-place, Holywell; Miss D. M. Bigg, 15A, St. Clement's-street, house, Woodstock-road; The Misses Allen, 79, Iffley-road, house, Manor-road.

Pembrokeshire.—The Haverfordwest R.D.C. has passed plans:—Bungalow at Solva, for Mr. Ivor Lawrence.—The Pembroke R.D.C. proposes to carry out road improvement schemes as follows:—To Neyland-Milford road, at an estimated cost of £6,000; to Neyland-Steynton road, at an estimated cost of £1,000.

Pinxton.—The contract for the building of the Institute to be erected under the Pinxton Collieries Welfare Scheme has been placed with Messrs. Greenwoods, Ltd., Mansfield, who are to commence work forthwith.

Plymouth.—Plans passed by T.C.: Solomon & Renny, two houses, Thornhill Way, Thornhill Estate; A. Blatchford, house, Lyndhurst-road; F. Worden, 15 houses, Holland-road; A. Spurrel, house, Compton Park-road; C. H. Bulley, seven houses, Thornhill-road, Home Park Estate; W. C. Griffiths, bungalow, Wolseley-road, St. Budeaux.

Pontefract.—Plans passed: Electricity sub-station at Townville, for the Yorkshire Electric Power Co., Ltd.; bungalow, Townville, for Mr. J. H. Burnhill; bungalow, Townville, for Mr. H. Pratt; house, Baghill-lane, for Mr. J. E. Fryer; house at Ackworth-road, Carlton, for Mr. G. W. Shephard.

Romford.—The M.H. have intimated their approval of a proposal of the Romford Guardians to carry out a comprehensive scheme of additions and improvements to their institution at a cost not exceeding £98,790.

Rotherham.—The T.C. has approved a scheme for the erection on the Corporation housing site of four shops with eight flats above.

Scunthorpe.—The L. & N.E.R. Co. has agreed to construct the Station-road diversion road and bridge to a width of 45 ft. between fences. Also to form a pathway 10 ft. wide from between the diversion road and the Brigg-road.

St. Helens.—The E.C. is recommending the extension of the Cowley Boys' Secondary School and the Middle School for Girls and the erection of a new boys' school.

South Shields.—Plans passed by T.C.: Messrs. T. A. Page & Sons, for Mr. Gompertz, re-building of premises, Laygate-lane; Mr. W. Hardy, house, The Lawe; Mr. J. W. Nichol, for Mrs. Betsy Ward, bungalow, Sunderland-road, Harton; Mr. F. W. Newby, for G. D. Davis, shop, 138, Adelaide-street; Messrs. Davidson & Sherwood, house, Central-avenue, Harton; Messrs. T. A. Page & Sons, for Mr. Milton Swales, two houses, North-avenue, Harton; Messrs. T. A. Page & Sons, for Mr. A. Ridley, two houses, North-avenue, Harton.

Sowerby Bridge.—The U.D.C. has decided to apply to the M.H. for sanction to borrow £10,687, for erecting twenty more houses at Albert-road.

Stockton.—Plans have been passed by the T.C. for the following: Two semi-detached houses, Oxbridge-lane, for Messrs. H. C. & J. C. Watson; two semi-detached houses, Oxbridge-lane, for Messrs. R. Johnson & Son; two pairs of semi-detached houses in Imperial-crescent, Norton, for Messrs. Blackall's Construction Co., Ltd.

Stranraer.—The Dean of Guild Court has granted warrant to the T.C. for erection of a block of four two-story houses.

Street ord.—Plans passed by U.D.C.: Thirteen houses, Beresford-road and Burleigh-street, for Messrs. H. Hampson & Co.; two houses, Gorse-lane, for Messrs. G. B. Brown & Sons; four houses, St. John's-road, for Mr. Thomas Hames; six houses, King's-road, for the Artistic Housing Co., Ltd.; two houses, Skerton-road, for Messrs. Winders & Tindale; sewering, &c., Sixth-street extension, for Trafford Park Estates, Ltd.

Swalwell.—The Durham C.C. have decided to replace the existing Swalwell Bridge on the main Gateshead-Hexham road, which is to cost approximately £60,000.

Tadcaster.—Plans passed by R.D.C.: Two houses at Owlett Hall-lane, Kippax, for Messrs. A. Bleasby and W. Shackleton; blacksmith's shop on Wetherby-road, Barwick, for Mr. G. T. Scott.

Torquay.—Plans passed by T.C.: Mr. Taylor, bungalow, Higher Windsor-road: Messrs. Vanstone & Sons, house, Seaway-lane, Chelston; Messrs. Fawcett, Easterbrook & Pappin, three houses, Westhill-avenue; Messrs. Taylor, Cummings & Steer, three houses, Westhill-avenue; Mr. Distin, house, Barrington-road; Messrs. T. Vanstone & Sons, 64 houses, Daison Estate; Mr. C. S. Appleton, bungalow, Rowley-road, St. Mary-Church; Messrs. Sture, Drew and Gerry, three houses, St. Margaret's-avenue; Mr. E. Gaunt, two houses, Newton-road; Mr. W. B. Moxhay, four houses, Hartop-road; Mr. G. H. Gayton, four houses, Hartop-road, St. Mary-Church; Mr. Hoare, house, Sherwell-lane; Mr. Forrow, house, Sherwell-lane; Mr. Foot, house, Sherwell-lane; Mr. B. Hooper, house, Sherwell-lane; Mr. J. R. Southcott, house, Sherwell-lane; Mrs. Gooding, house, Sherwell-lane; Co-operative Society, Ltd., shop, 32, Park-road, St. Mary-Church; Mr. W. H. J. Whittall, house, Lower Lincombe-road; Mr. Bell, bungalow, Blackshill, St. Mary-Church; Messrs. Riggs, Waldron & Co., eight houses, Sherwell-lane; Mr. Penwill, three houses, Shiphay-lane; Miss Hall, house and shop, Fore-street, Barton; Mr. F. W. Phare, house, Wheatridge-lane; Messrs. Gaunt & Gaunt, three houses, Westhill Estate, Empire-road; Messrs. Gaunt & Gaunt, 12 houses in Sherwell Valley, off Mallock-road; Messrs. Ball & Wilkinson, 23 houses adjoining Lummaton Quarry, Happaway-road; Mr. R. Luton, house, Mallock-road; Mr. Olding, house, Mallock-road; Mr. Stone, house, Sherwell-lane.

Wakefield.—Plans passed by City C.: House, Welbeck-street and house in Barnsley-road, for Mr. J. Charlesworth; four houses, Thornes-road, for Mr. H. Fisk; two houses, Thornes-road, for Mr. H. Lumb; offices, warehouse, garage, dining-hall, &c., at Bective Mills, for Messrs. Harrop Bros.; house, Horbury-road, for Mr. W. Fisher; house, Eden-avenue, for Miss Hodgson; house, Thornes-road, for Mr. H. Bellamy; two houses, Thornes-road, for Mr. J. H. and Miss Perkins; and seven houses, Thornes-road, for Mr. A. E. Lockwood.—The City C. are making application to the M.H. for sanction to borrow £88,000, for the purposes of remodelling the Calder Vale Sewage Disposal Works, also for £88,050, for the purposes of erecting 200 concrete houses on the duo-slab principle; also for £28,000, for developing the Lupsett estate.—The West Riding C.C. propose to provide public elementary schools at Bentley, Edlington, and Rossington.—Plans passed by T.C.:—Mr. Herbert Dobson, house in Barnsley-road and Welbeck-street, for Mr. J. Charlesworth: Mr. J. P. Firth, offices, warehouse, garage, dining hall, dye-store, &c., Bective Mills, Alverthorpe, for Messrs. Harrap Bros.; Mr. W. H. Ogden, shop in Doncaster-road, for Mr. J. Jacklin; Mr. James Dyson, house in Horbury-road, for Mr. W. Fisher; Mr. J. Foster, house, Eden-avenue, for Miss Hodgson; Mr. W. H. Ogden, stable and store-room, Doncaster-road, for Mr. G. W. Lunn; Mr. H. Dobson, two houses, Thornes-road, for Mr. H. Lumb; Mr. H. Dobson, four houses, Thornes-road, for Mr. H. Fisk; Messrs. Bell & Kay, house, Thornes-road, for Mr. Herbert Bellamy; Messrs. Bell & Kay, two houses, Thornes-road, for Mr. J. H. and Miss Perkins; Messrs. Bell & Kay, seven houses, Thornes-road, for Mr. A. E. Lockwood.

Watford.—Plans passed by T.C.: Pair of semi-detached houses, Sherwood-road, Mr. E. W. Puddifoot; shop, 8t. Alban's-road, Mrs. E. Williams; house, Oxhey-road, Mr. J. B. Porter; house, Bushey Mill-lane, Mr. A. J. Wiggs; house, Green-lane, for Mr. W. T. Griffin; addition, Oxhey-road, Mr. R. J. Lindsay; house, Hempstead-road, Messrs. Clark Bros.; two houses, Clifton-road, Mr. F. Ausden; three houses, Bushey Mill-lane, Mr. A. T. Janes; house, Bushey Mill-lane, Mr. E. Wells; house, Bushey Mill-lane, Mr. F. A. Bagley; four houses, King George's-avenue, for Messrs Ings, Clark, Garrad, and Brightman; pair of semi-detached houses, rear of St. John's-road, Mrs. E. Allen; factory, King George's-avenue, Mr. S. Wallis; new road and sewers, Rickmansworth-road, Messrs. Clifford & Gough.

West Hartlepool.—The T.C. have approved the following plans: Hartlepool Co-operative Society, 27 houses, Patterdale-street; Mr. J. R. Winter, bungalow, Stockton-road; Mr. S. Jackson, two houses, Stockton-road; Messrs. Robinson & Brudenell, two semi-detached houses, Bolton-grove, Seaton Carew; Mr. E. M. Tweddle, 10 houses, Allendale-street, Seaton Carew; Mr. P. Anderson, house, Caledonian-road; Mr. P. J. Anderson, house, Caledonian-road; Mr. J. Herring, cartwright's shop, Oxford-road; Mr. C. Turnbull, two semi-detached houses, Chatham-gardens; S. E. Moore, bungalow, Caledonian-road.

Weymouth.—Plans passed by T.C.:—Bungalow, Fernhill-avenue, Jenkins, Hilt, & Grant, for H. F. C. Jenkins; house, Roman-road, H. E. Daffern, for A. Barrett; flats, Ican-road, Jesty & Baker, for E. A. Baker; 11 bungalows, Southlands-road, S. Jackson & Sons, for K. Openshaw; house, Fernhill-avenue, Jenkins, Hitt & Grant, for H. Jenkins.

Willington.—The U.D.C. have decided to reconstruct the main road for about one mile, extending from Whitehouse through Willington to Cumming's Bridge, on the Crook boundary. The estimated cost is £33,000.

Winchester.—Plans passed by R.D.C.: House at Littleton, C. A. Lund; farm cottages, Hookpit, T. Whitcher; two bungalows, Stoney-lane, Andover-road, E. F. Johns; two cottages, Sandy-lane, Fair Oak, R. A. Mears.

Workington.—The T.C. are marking an application to the M.H. for permission to erect 200 houses, as the first instalment of a building scheme.

Worthing.—The T.C. has approved of a recommendation to erect a pavilion and bandstand at the cost of £34,500 and £23,900 respectively. Messrs. Adshead & Ramsey are the architects. Plans passed: Two houses, St. Thomas's-road, for W. G. Sisman; six houses, Grand-avenue, for D. S. Barclay; two houses and garage, South Farm-road, H. M. Potter, for E. J. Standen; house, Broadwater-road, F. G. Abell, for A. W. Cæsar; house and garage, St. George's-road, J. E. Lund, for F. H. Butler; two flats, H. Osborne, for F. H. Butler; two flats, Gerald-road, H. Osborne, for G. A. Comins; house Brooklyn-avenue, H. Osborne, for P. Sutherland; house, Abbot's Close, Adams & Collier, for Miss Woodward; house and garage, W. Benn, for H. Greenyer; three houses, St. Thomas's-road, for S. E. Merredew; five houses and garage, Ladydell-road, J. E. Lund, for W. C. Butler; house, Brooklyn-avenue, A. Clare, for Mrs. Hughes; eight houses, Hamroad, for A. Clare; three houses, Brooklyn-avenue, for A. Clare; depository Cross-street, Clayton & Black, for Durtnall & Co.; three houses, Wigmore-road, for the Worthing Rotary Club; cold storage and ice-making factory, rear of Chatsworth-road, H. J. West & Co., Ltd., for H. Hesford; house, Goring-road, E. J. Love, for L. J. M. Fisher.

Wortley.—The R.D.C. has received notification from the M.H. approving of the 75 additional houses to be built by the Council.

York.—Plans passed by T.C.: Yorkshire Farmers, Ltd., roof to warehouse, Skeldergate; E. Warrington, house, Moorgate; S. H. Davis, house, Hobgate; F. J. Tucker, house, Hobgate; H. Benton, house, Moorgate.

Fires.

Earlsfield.—The factory of Messrs. Hugh Stevenson & Sons, cardboard box manufacturers, has been destroyed by fire.

Middlesbrough.—Damage by fire has been done to the warehouse of Messrs. J. Allick & Sons.

NEW COMPANIES.

The particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

Builder & Son, Ltd. (195,606). Registered February 8. 1 and 2, Union-street, Dudley. Builder, trading as Builder & Son. Nominal capital, £25,000.

"M. P." Construction & Cleaning Co. Ltd. (195,515). Registered February 4. 87 Bishopsgate, E.C. 2. Contractors, builders, and civil engineers. Nominal capital, £5,000.

Whiteman & Co. (Builders), Ltd. (195,527). Registered February 4. 28, The Broadway. Stratford, E. 15. Builders and contractors, &c. Nominal capital, £1,000.

Gallaway & Wilson, Ltd. (195,510). Registered February 4. 32, Portland-terrace, Southampton. Wholesale and retail builders' merchants, importers of building materials and allied goods, builders and contractors. Nominal capital, £1,000.

Wood & Co. (Brixton), Ltd. (195,549). Registered February 5. 541, Station-road, Brixton, S.W. Builders, decorators, owners and dealers in leasehold and freehold property. Nominal capital, £1,000.

Builders (Hove), Ltd. (195,372). Registered January 29. 2, Church-road, Hove, Sussex. Builders and contractors. Nominal capital, £500.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ALTOFTS.—For erection of four scullery houses, for the U.D.C. Mr. T. H. Hailstone, Surveyor, Council Offices, Altofts, near Normanton :—

*Harry Robshaw, Castleford	£1,600

ASHTON-IN-MAKERFIELD.—For the erection of new Central School for the Lancashire E.C. Mr. H. Littler, architect, Preston :—

*Mr. J. Watson, Ashton-in-Makerfield.

BRADFORD.—For extensions and alterations to the Lillycroft W.M. Club at Manningham. Mr. J. Jackson, architect, Piccadilly, Bradford :—

**Masons' work*—F. G. Burgess, Bradford.
**Joiners' work*—Wilkinson & Dawson, Bradford.

BRADFORD.—For asphalters' work to the roof of Messrs. Charles Sykes & Co.'s extensions at Willowfield-street, Lidgett Green, Bradford. Mr. W. E. Bickers, architect, Bank-chambers, Bradford :—

*Tunstall's, Seysell & Limmer Rock Asphalte Co., Ltd., Leeds.

BRADFORD.—For rock asphalte paving to roadway at the City-road Goods Station, for the L. & N.E.R. Co. District Engineer, Wellington-street, Leeds :—

*Tunstall's Seysell & Limmer Rock Asphalte Co., Ltd., Leeds.

BRADWELL.—For additions and alterations to garage, for the Bradwell Joint Hospital Committee :—

H. Wardle	£220 0
Maddock Bros.	176 9
*Johnson & Co.	155 10

BRECONSHIRE.—The County E.C. has accepted the following tender for re-building of Cwmtwrch Council School :—

*H. T. Havard, Brynmawr	£4,792

BUXTON.—For the erection of 18 pairs of parlour-type houses on the Heath Grove estate, for the T.C. :—

*Ridyard & Co., Ashton-under-Lyne	£20,418 9 5

CARSHALTON.—For the erection of six houses at Carshalton. Mr. E. Meredith, architect, 7, Goodmayes-road, Goodmayes, Essex :—

	Type 2.	Type 3.	Type 4.	Total.
W. J. Cearns, Stratford :—	£1,788 10 ..	£2,017 ..	£1,831 10 ..	£5,636 0
H. J. Cooper, Ltd., London :—	1,612 0 ..	1,884 ..	1,626 10 ..	5,122 0
F. W. Romains & Sons, Chadwell Heath :—	1,418 0 ..	1,724 ..	1,567 0 ..	4,709 0
*H. J. Gower, Ltd., London :—	1,381 12 ..	1,617 ..	1,496 0 ..	4,494 12

CHERTSEY.—For extensions to sewage works at Byfleet and Pyrford, for the R.D.C. :—

*Hardy & Co., Woking	£7,402 14
J. Mowlem & Co.	7,492 13
W. G. Tarrant	7,975 0

CHESTERFIELD.—For erection of 50 houses on Highfield Hall Estate, for the T.C. :—

*G. Webber	£11,500

CROMPTON.—For the erection of new Central School, for the Lancashire E.C. Mr. H. Littler, architect, Preston :—

*S. & J. Smethurst, Ltd., Oldham.

DENBIGH.—For erection of seven workmen's dwellings, Bodhyfryd-road, for the T.C. Mr. M. E. Morris, Sanitary Inspector, Town Hall, Denbigh :—

J. W. Jones, Liverpool	£2,900
Ellis & Hughes, Denbigh	2,772
Jones & Pritchard, Abergele	2,443
W. F. Humphries & Son, Acrefair, Ruabon	2,400
*Wm. Davies, Denbigh	2,360

DEWSBURY.—For painting at covered market, for the T.C. :—

*J. Shepley	£504 16 8

EASTRY.—For supply of materials to the R.D.C. :—

*London Granite Co.: 1,000 tons of granite, 18s. 8d. per ton.
*Road Maintenance and Supply Co.: 600 tons of "quartzite," at 17s. 11d. per ton.
*Wingham Engineering Co.: 800 tons of 2 in. crushed Penlee "basalt," 22s. 1d. to 23s. 6d. per ton, according to place of delivery.

HALSTEAD.—For erection of four pairs of semi-detached cottages, for the U.D.C. Mr. W. A. Nicholson, Surveyor, Halstead, Essex :—

J. G. Grey, Coventry	£5,349 0
G. Sudbury & Sons, Halstead	5,107 16
A. J. Arnold, Chelmsford	4,759 0
C. Deaves, Bures, Suffolk	4,478 0
S. G. Woodman, Halstead	4,376 0
*J. S. Norton, Halstead	4,312 0

HASTINGS.—For construction of roadway to new generating station, for the T.C. :—

*Fairweather & Ranger, London	£750

HENDON.—For construction of 690 yards of 9 in. pipe sewer and surface water drainage, &c., Colin Deep-lane, for the U.D.C. Mr. A. O. Knight, Surveyor, Town Hall, Hendon, N.W. :—

E. H. Jackson, Hornsey	£2,331 8 0
London County & Public Works, Ltd., London, W.C.	2,192 9 6
Moss & Sons, Bloomsbury, W.C.	1,951 4 6
Chas. Carter, Golders Green	1,921 7 0
*Thos. Adams, Wood Green	1,903 0 0

HENDON.—For construction of sewage disposal works and sewerage and drainage works, for the U.D.C. Mr. A. O. Knight, Town Hall, Hendon, N.W.4 :—

D. T. Jackson, Barking, E.	£65,130 14 2
Muirhead & Co., Westminster	64,520 16 9
G. Bell & Sons, Tottenham	59,830 0 0
Howard Farrow, Golders Green	59,758 3 4
*William Moss & Sons, Bloomsbury-street, W.C.	59,658 10 5

HENDON.—For erection of 44 houses and eight flats, Kingsbury-road, for the U.D.C. Mr. A. O. Knight, Engineer, Town Hall, Hendon, N.W.4 :—

S. Merton Hughes, Barons Court	£29,969 0 0
A. J. Hill, Hendon	26,736 0 0
Arthur Cole, Ltd., Luton	26,271 0 0
W. Jones & Sons, Victoria-street, Westminster	25,549 17 11
*R. L. Tonge, Watford	24,436 0 0

HUNSWORTH.—For laying a 6 in. water main, extending from Tong Cemetery to Brierley Bar, for the Hunsworth U.D.C. :—

*R. Naylor & Sons, Girlington.

KINGSTON-ON-THAMES.—For the erection of 20 houses at Cambridge-road, for the B.C. :—

*H. H. & F. Roll	£12,598

LEEDS.—For wrought iron fencing and gates at (*a*) Middleton Park, and (*b*) Cross Gates Recreation Ground, for the T.C. :—

*G. Westmoreland & Son—(*a*) £717 3s., and (*b*) £412 18s. 6d.

LEEDS.—For construction of ladies' lavatories in Mansion-lane, Roundhay, for the T.C. :—

*G. Monkman	£2,435 9

LEEDS.—For painting works, at Killingbeck Sanatorium for the T.C. :—

*H. Shann	£221 7

LEEDS.—For painting work for the Health Committee, of the T.C. :—

*H. Shann—Seacroft Hospital	£1,261 7 4
*L. C. Wilkinson—Nurses' Hostel, 5 and 6, Blenheim-square	148 11 0
*L. C. Wilkinson—Health Department Offices	325 7 0

LEEDS.—For supply of cast-iron frames, covers, &c., required for Leighton Reservoir, for the T.C. :—

*Ellerby Foundry Co.	£146

LEEDS.—For supply of 30,000 engineering bricks for Bywash Bridge, for the T.C. :—

*Geo. Armitage & Sons—£5 per 1,000.

LEEDS.—For supply of 5,500 tons of gravel and 3,500 tons of sand, for the T.C. :—

*B. Whitaker & Sons—11s. 6d. per ton.

LEYTONSTONE.—For conversion of classroom to laboratory at County High School, for the Essex C.C. :—

*North of England Furnishing Co.	£173 9 2

LIVERPOOL.—For erection of 31 "B" type houses at Springwood Estate, Allerton, for the T.C. :—

*J. Jones & Son	£15,345

LIVERPOOL.—For the erection of 93 "B" type houses on Larkhill Estate, for the T.C. :—

*C. J. Doyle	£48,825

LIVERPOOL.—For erection of 24 "A" type houses on Vale-road, Woolton, for the T.C. :—

*J. Jones & Son	£9,768

LIVERPOOL.—For construction of roads and sewers on Larkhill Estate, for the T.C. :—

*Lawrence Marr & Son	£493 15 1

LIVERPOOL.—For construction of roads and sewers on the Springwood Estate, Allerton, for the T.C. :—

*W. F. Chadwick, Ltd.	£10,257 14 9

LIVERPOOL.—For the construction of roads and sewers on the Edge-lane-drive Estate, for the T.C. :—

*W. F. Chadwick, Ltd.	£4,568 17 4

LONDON.—For painting East Lewisham Properties (16 flats), for the Lewisham B.C. :—

*H. E. Brown,	£118 12 0
W. Goddard & Son	119 10 0
A. T. Peyton	123 5 6
R. Cabell	125 2 6
Burke, Collins & Co., Ltd. (Incomplete tender)	151 12 3

LONDON.—For repairs at 13–21, Lee-terrace, for the Lewisham B.C. :—

*A. T. Peyton	£130 8

MANCHESTER.—For the rebuilding boundary wall of Didsbury College, for the Manchester Corporation :—

*T. Campion & Son	£518

METROPOLITAN ASYLUMS BOARD.—The following tenders have been received :—

High Wood Hospital for Children—Erection of balcony and verandah—	
T. W. Palmer & Co.	£1,470 0 0
F. W. Jarvis	1,036 0 0
H. C. Horswill	1,030 0 0
W. S. Sharpin	880 0 0
*Wm. Simms, Stepney	746 0 0
South Eastern Hospital—Cleaning, painting and repairs—	
The Marvello Co.	£1,728 0 0
H. A. Thomas & Son	1,200 0 0
Norfolk Decorators, Ltd.	1,193 6 8
J. S. Fenn	1,098 0 0
A. T. Peyton	1,024 0 0
J. Hocking & Co.	998 0 0
A. H. Inns, Ltd.	997 0 0
L. Kazak	996 0 0
W. Bickerton	985 0 0
E. Proctor & Sons	903 0 0
*D. C. Bowyer, Belvedere	883 10 0
Joyce Green Hospital—Cleaning, painting and repairs—	
Norfolk Decorators, Ltd.	£2,490 12 0
H. A. Thomas & Son	2,008 0 0
J. Hocking & Co.	1,970 0 0
P. Miller & Son	1,799 0 0
Barnes & Co.	1,605 0 0
E. Proctor & Sons	1,600 0 0
J. S. Fenn	1,597 18 0
L. Kazak	1,545 0 0
*D. C. Bowyer, Belvedere	1,329 9 6
St. Luke's Hospital—Additional coke store, etc.—	
W. Church	£175 0 0
R. A. Evans & Co.	151 0 0
*D. Leighton & Son, Lowestoft	147 0 0
Pinewood—Formation of water storage tank—	
Norris & Co. (Builders), Ltd.	£243 0 0
*Spear & King, Berks.	225 5 0
Pinewood—Provision of fire escape staircases—	
Stock & Collings	£166 0 0
T. W. Palmer & Co.	166 0 0
J. & W. Shale	155 5 0
*Monk Bridge Construction Co., Ltd., York	109 12 0
Tooting Bec Mental Hospital extension—Constructional timber—	
King & Scarborough	£870 16 9
W. Arter & Son	850 18 8
Vigers, Sons, & Co., Ltd.	838 6 6
J. B. Lee & Sons Ltd.	837 7 8
H. J. Thomas	817 6 0
W. D. Tucker & Sons, Ltd.	797 1 3
Burt, Boulton & Haywood, Ltd.	749 19 1
Ingram, Perkins & Co., Ltd.	747 7 7
A. Allnack	726 11 5
*E. Gray, Ltd., Forest Gate	644 6 1
A. S. L. Mackintosh & Partners	(Informal)
Denny, Mott & Dickson, Ltd.	(Informal)
Tooting Bec Mental Hospital—Supply and erection of steel partitions—	
Rea Metal Casements, Ltd.	£609 10 3
Williams and Williams, Ltd.	375 0 0
*The Crittall Manufacturing Co., Ltd., Braintree	348 0 0
Belmont Institution—Repairing wood girder and lintels—	
F. Potter	£161 0 0
A. A. Secrett, Ltd.	153 0 0
W. Hussey	151 5 0
*C. H. Boyd, Ltd.,	116 0 0

WELLINGTON (SALOP).—For 20 "A" Type and 10 "C" Type houses, and alternately 20 "B" Type houses, for the U.D.C. Mr. G. H. Connor, Engineer and Surveyor :—

	"A" Type. No. est. for.	"A" Type. Per House. £ s. d.	"B" Type. No. est. for.	"B" Type. Per House. £ s. d.	"C" Type. No. est. for.	"C" Type. Per House. £ s. d.
Engineer's and Surveyor's Estimate	20	475 2 0	20	490 0 0	10	491 9 0
Cooke (Longport), Ltd.	4	604 8 7	4	604 12 10	2	600 9 8
J. J. Blackburn, Manchester	12	582 12 3	12	582 3 0	12	574 3 7
J. Bennett, Keele, Staffs.	20	577 2 0	20	577 17 1	10	583 10 0
J. Riley & Son, Wellington	–	—	–	—	6	544 10 0
E. Thompson & Co., Ltd., Birmingham	20	537 10 0	20	541 10 0	12	537 10 0
J. Carver, Wellington	20	529 15 4	20	539 7 7	10	541 10 0
Exors. A. Roper & Son, Wellington	20	527 0 0	20	522 10 0	10	523 0 0
Wellings & Son, Wellington	12	504 12 0	12	514 13 4	6	491 3 5
R.B.F. Construction Co., Shrewsbury	20	499 16 0	20	530 2 0	10	472 0 0
J. H. Thompson, Grimsby	24	486 5 0	24	489 5 0	12	489 0 0
Millington, Oakengates	8	477 14 0	–	—	6	499 0 0
H. Lakelin, Longdon	–	—	–	—	10	446 17 0
†Eadie, Towers & Co., Wolverhampton	20	438 10 0	20	440 0 0	10	434 0 0

† *Provisionally accepted for* 20 "A" *Type and* 10 "C" *Type.*

MIDDLETON.—For the widening of Heywood-road from Manchester Old-road, Rhodes, to Simister-lane, Bowles, for the Corporation :—

*S. & J. Smethurst, Ltd., Oldham.... £31,208

NORTON.—For erection of 46 houses at the West-end of Norton, for the Doncaster R.D.C. Mr. T. H. Johnson, Priory-place, Doncaster, architect :—

*Messrs. Firth & Whittington, Doncaster £21,422

NORTHAMPTON.—For erection of War Memorial, for the Town and County jointly :—

*T. H. Higgins, Wellingborough.... £2,352 10

OTLEY.—For the erection of 122 houses, for the T.C. :—

*W. J. & R. Turnbull, Leeds £41,090

OTLEY.—For erection of houses on a site at Newall Carr, for the U.D.C. :—

46 parlour-type houses, at £470 each.
16 non-parlour-type houses, at £402 each.
20 non-parlour-type, with two bedrooms, at £360 each.

*W. J. & R. Turnbull, Leeds.

ST. ANDREWS.—For erection of 50 houses, St. Mary's-street site, for the T.C. Mr. C. F. Anderson, Housing Architect, St. Andrews. Quantities by Mr. C. R. Douglas, measurer, Dunfermline :—

Excavator and Mason Work—
Jas. P. Thomson, St. Monans £8,418 15 1
Carpenter and Joiner Work—
Henry Ramsay, Dunfermline 5,400 17 10
Slater and Roughcast Work—
Wm. Greig, St. Andrews 1,768 0 5
Plumber Work—
Wm. Nicol & Sons, Ltd., Buckhaven 2,820 16 0
Plaster and Cement Work—
D. & T. Peebles, Leven..... 1,971 1 3
Glazier Work—
D. & J. Edmond, Cupar 111 8 4

SOUTHPORT.—For setting back wall in Hoghton-street, for the T.C. :—

*T. Porter & Sons £117 8 6

TADCASTER.—For erection of (*a*) six houses at Allerton Bywater, (*b*) six houses at Kippax, and (*c*) six houses at Tadcaster, for the Tadcaster R.D.C. :

*(*a*) H. Roper, Kippax £2,355 0
*(*b*) H. Roper, Kippax..... 2,355 0
*(*c*) A. Brayshaw, Tadcaster 2,491 14

TADCASTER.—For construction of new sewage works at Barwick and at Scholes, for the Tadcaster R.D.C. :—

*Wm. Hartley £724 16 6
*J. A. Rodgers & Sons 1,119 6 8

TIVERTON.—For construction of new section of road and diversion of existing highway, in the parish of Uffculme. Mr. J. R. H. Warren, Highway Surveyor, Central Chambers, St. Peter's-street, Tiverton :—

Sir W. Prescott, & Sons, Ltd., Westminster £3,128 17 0
G. Pollard & Co., Ltd., Taunton 1,732 0 0
Fothergill Bros., Ltd., Exeter 1,725 13 4
*T. Williams, Tiverton 1,480 0 0

WEYMOUTH.—For fanlights, casements, gable ends, &c., for the concert hall, Alexandra Gardens, for the T.C. :—

Jenkins, Hitt & Grant, Ltd..... £247 0 0
Betts & Co., Ltd. 243 17 9
*Theo. Conway, Ltd. 177 0 0
Bird & Cox, Ltd. 245 17 0

WEYMOUTH.—For supplying and laying 1,000 super yards of pitch pine block flooring in the concert hall, Alexandra Gardens, for the T.C. :—

*J. F. Ebner—11s. 3d. per super yard.

WIGAN.—For improvements and reconstruction of sewage works at Hoscar for the B.C. :—

*James Byrom, Ltd., Bury £73,371

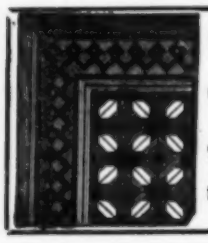
WIGAN.—For storm water tanks at sewage works at Pemberton, for the B.C. :—

*James Byrom, Ltd., Bury £7,270

WITHAM.—For the erection of three pairs of semi-detached houses, for the U.D.C. :—

*Blade Wenden ..... £475 per house.

In our last issue we gave the number of houses to be erected at Barking as 50 ; it should be 59.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